This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

EducT 739.20.425

Harvard College Library
THE GIFT OF
GINN AND COMPANY

Sent $1.40

VOCATIONAL CIVICS

THE MACMILLAN COMPANY
NEW YORK · BOSTON · CHICAGO · DALLAS
ATLANTA · SAN FRANCISCO

MACMILLAN & CO., LIMITED
LONDON · BOMBAY · CALCUTTA
MELBOURNE

THE MACMILLAN CO. OF CANADA, LTD.
TORONTO

VOCATIONAL CIVICS

A STUDY OF OCCUPATIONS AS A BACKGROUND FOR THE CONSIDERATION OF A LIFE-CAREER

BY

FREDERIC MAYOR GILES

Late Principal of The DeKalb Township High School, DeKalb, Ill.

AND

IMOGENE KEAN GILES

Teacher of Vocations, J. Sterling Morton High School, Cicero, Ill.

New York

THE MACMILLAN COMPANY

1920

All rights reserved

HARVARD COLLEGE LIBRARY
GIFT OF
GINN & CO.
DEC 11 1930

COPYRIGHT, 1919
BY THE MACMILLAN COMPANY

Set up and electrotyped. Published April, 1919.

TO

HARRY VICTOR CHURCH

MASTER COUNSELOR OF YOUTH

PREFACE

The need of vocational guidance for boys and girls has increased many fold in the last year. Such alluring opportunities for the beginner have opened up, that it is hard to prove to him the necessity of a more adequate preparation. Every effort to broaden the youth's outlook before he becomes a part of the occupational world is needed at this time. Fundamental to this purpose are text books that contain facts about employment conditions and furnish data by which one may estimate the probable future in a given business or profession.

The plan and the foundation of the present volume were the result of an experiment in vocational guidance carried on for a period of years by the late Mr. Giles while he was a high school principal. A detailed account of Mr. Giles' method of procedure may be found in Vocational Guidance, U. S. Bureau of Education Bulletin, 1914, No. 14, pp. 52–59. Mr. Giles was constantly collecting information about vocations which he kept in a series of scrap books. These, together with his outlines and notes, form the nucleus from which this book has grown.

The new "community civics," which is being recognized as one of the most vital of junior high school studies, naturally includes a study of industries and occupations. In many schools, the new course in citizenship gives civics the first semester, and "vocations," the second. As one's work in the world is so closely allied with his loyalty as a citizen, it seems most natural to call this text book, "Vocational Civics."

I thank Mr. John M. Brewer, head of the department of psychology and education, Los Angeles State Normal School, for reading the manuscript and giving many excellent suggestions; and Mr. W. Carson Ryan, Jr., of Washington, D. C., for valuable advice. Mr. W. L. Mathews provided the questions and exercises for Chapter V.

I am under obligations to Sears, Roebuck and Company, The International Harvester Company, and The National Cash Register Company, for their courtesy in lending photographs.

IMOGENE K. GILES.

October, 1918.

TABLE OF CONTENTS

CHAPTER		PAGE
I	Finding Your Place in the World of Occupations	1
II	Government Service	18
III	Earth Occupations	31
	Agriculture	32
	Forestry	46
	Mining	50
	Fisheries	55
IV	Transferring Occupations	59
	Transportation	59
	Banking	80
V	Manufacturing and the Building Trades	87
VI	Commercial Occupations	121
	Advertising	139
VII	The Professions	143
	The Law	145
	Medicine	152
	Nursing	162
VIII	The Professions (*Continued*)	171
	Teaching	171
	Journalism	177
	Social Service	183
	The Library	188
IX	The Professions (*Continued*)	195
	Engineering	195
	The Chemist	203

CONTENTS

CHAPTER		PAGE
X	PERSONAL SERVICES AND PROFESSIONS FOR ENTERTAINMENT	209
	Dressmaking, Millinery, and Tailoring	209
	Hotels and Restaurants	218
	Musicians, Artists, Actors	220
XI	PERSONAL QUALIFICATIONS	225

VOCATIONAL CIVICS

CHAPTER I

FINDING YOUR PLACE IN THE WORLD OF OCCUPATIONS

A recent story, which has its setting in the rural district of a foreign land, pictures a little pastor of a country church who hates his work. He cannot bear to have Sunday come around because he must preach on that day, he feels that time spent in preparing his sermons and attending to his pastoral duties is just that much taken away from what he would like to be doing; and, in fact, his whole work is absolutely contrary to his taste and interest. On the other hand, a man who had gone into business, and had succeeded in getting a splendid financial return for his efforts, was just as unhappy and dissatisfied. The little pastor was interested in agriculture; he loved to experiment with soils, and with his knowledge of chemistry and his untiring industry during the hours when he could escape from his professional duties, he was able to make his land, which was situated in the midst of barrenness, fertile and productive. The business man, when asked the cause of his discontent in the face of prosperity, replied, "I wanted to be a lawyer."

"Why," you ask, "did these two men spend their lives in work that was naturally repugnant to them when each knew perfectly well where his tastes and abilities really lay?" The first case was in a foreign land where the

son's vocation is usually planned out and decided upon by his parents; the second case was in our own country, where it was taken for granted by the family and all concerned that the boy would follow in the footsteps of his father, who was a successful business man; and the boy drifted along the line of least resistance.

These are only two examples, but we are told that in the business and professional world there are countless "misfits," men who, though succeeding fairly well, are unhappy in their work; and there are far more tragic cases of those who are so unadapted that they are failing entirely or barely eking out a living. These incidents illustrate a state of affairs for which you of the coming generation must work out a remedy. This course of study that we are entering upon is planned for the purpose of giving you a view of things that may serve as a guide, that may help you to avoid such unfortunate choices as those of the little pastor or of the sturdy business man, both good choices in themselves, but both unsuited to those particular persons.

But do not get the impression that every adult is doing what he does not enjoy. If you will read a little book, called *The Romance of Labor,* you will find short stories of men doing their day's work happily and triumphantly. They are not presidents or kings, but men who fortunately have found the work to which something within them responds, and that makes them say day after day, "I am where I belong. I am doing what I most want to do and I love it." Some of these occupations are dangerous, some are hard physically. One man, a glass blower, lived in a city where it was against the law for an alien to engage in that business. He had broken the law, and on being brought to trial his only defense was that he loved his work. Read the story to see how he came out, and read the rest of the book to get a picture of men who find their

day's work as appealing and as stimulating as a football game or a call to serve his country is to the high school boy.

When you consider that by your choice of your life work you are to decide how you will spend your time for eight or nine hours a day during thirty or forty years, and that it may mean that that time will be spent in the deadening drudgery of the little pastor or in the satisfied joy of the glass blower, does it not seem worth while to spend some effort in working out a plan that will help in the decision?

But while we believe thoroughly that it is legitimate to choose an occupation from the point of view of happiness, and that our work may even be our "greatest source of happiness," there is another basis of decision which is of high and perhaps of first importance. I refer to the basis of necessity. There are comparatively few men in the United States who are not engaged in gainful occupations. Even the sons of the wealthiest parents are as a rule interested in their fathers' businesses and many are preparing to step in and assume control of great financial undertakings when the older men are obliged to give them up. At the other extreme are the poor specimens of humanity who tramp and beg their way through life. Probably none of you belong to either of these classes; you will not work merely for the satisfaction of accomplishment, neither will you be content to shamble along and obtain your bread in the easiest possible way. On the other hand, before many years you are going to realize that you must work and work hard if you are to support yourselves and those who are dependent upon you.

In a sense conditions for the young man without a definite purpose are becoming more complex and difficult. Around us is a great big, buzzing world, filled with every

conceivable kind of business and with men and women in every degree of success or failure. Why is it that there are so many men who are not able to save anything for an emergency or for their old age? The answer is, in part, that there is such an immense and confusing field from which to choose; in this field are certain occupations into which it is very easy for boys and girls to drift, but which are blind alley occupations, so called because they lead nowhere, and in ten years the young person finds himself just about where he began. Again, even though the occupation may be a good progressive one, the boy is often unsuccessful, because he is a misfit; there is some other line to which he really belonged, and where he could have done satisfactory work.

Competition is becoming so severe, business life so strenuous, and the balance between income and expenses so hard to adjust, that now-a-days if one is able to support his family and to save a little as he goes along he has accomplished a task that is worthy the brains and the strength of a man. The encouraging part of it all is that while it may look like a hopelessly confusing problem, and while the task is in reality a hard one, yet experienced business men tell us that there never was a time when it was so entirely possible for every capable young man to make a success of his work. The important thing is out of this entangled mass to choose the direction of your path and then to learn how to proceed along it. And that is the object of this course, to help you to make your choice so that you may get into the work that will, on the one hand, bring you the greatest happiness and satisfaction and, on the other, enable you to earn your living in the best possible way.

For the girls, too, this is equally important. More and more, women are engaged in gainful occupations, not only

those who do not marry, but also that large majority of women who spend a few years in some other work before their marriage, and who after marriage are often compelled by circumstances to earn an income. Even the woman whose life work is that of making a home for her husband and family, should know as much as possible of the great outside business world, because only in this way can she know the problems of those who are facing these things, only thus can she make her home the real vital factor that it should be in backing up the work of the world. In facing this problem, the first question that naturally arises is: "What principles should guide me in the choice of an occupation? What help can I get in making a choice?"

There are a few points to consider on the negative side. First, do not drift into an occupation, that is, do not take what lies near at hand without regard to your fitness for it. Drifting is the easiest way of getting into one's life work, but it probably leads to more unhappiness than any other one cause. Only a few days ago, a mechanical engineer connected with a large iron works, told me of a serious strike that was taking place among their workmen. He remarked, "One can't wonder at it. A man can't meet expenses with the wages that these men make." When I asked whether they were foreigners, men who were handicapped and so couldn't get beyond the field of unskilled labor, he replied, "No, they are Americans; they belong to a large army of rather ambitious folks who drifted into work that brought an immediate income, rather than wait to learn a trade or at least to find work in which there was a chance to grow." This is only one of many examples of the bad results of drifting, the easy way that a large percentage of people take, but that seldom brings satisfactory results.

Second, do not choose a vocation because you have heard a rumor that some one person has made money in it. There is need of a much more thorough investigation than this. Perhaps it was mere chance that brought the money to this particular person; perhaps he was better fitted for that line of work than you are; or possibly the number of opportunities in that occupation is decreasing and by the time you are ready there may be no place for you. Rumor may be false, and if true there are often many causes that may have led to the result in that particular case, so do not decide on that alone.

Third, do not choose an occupation for non-essentials, that is, because you can wear clean clothes, because the hours suit you or the tasks are easy. If the work does not interest you enough to make you willing to sacrifice a little comfort and convenience to it, it is bound in the course of a few years to become mere drudgery. As we study the different occupations, perhaps in some one of them you will feel an interest and a response that will make such details seem unimportant.

So much for what not to do. On the positive side, there are, in general, three viewpoints from which to look in making a decision.

First, you should consider your ability to do the work in this line, that is, have you the power to do this work better than the average person? You want to know, then, whether you have skill of hand or eye, whether you excel in memory, quickness of decision, executive ability, and the like. Your school work will show something about these things; skill of hand in manual training and drawing, mathematical ability in algebra, and quickness of decision in foot-ball games. As we go on we shall see that there are general abilities that seem to go with certain lines of work, but at the same time the line is not drawn very

sharply; there are many occupations open to the boy with manual skill, while the man with executive ability has almost numberless opportunities. One capable business man started work as a salesman, but he had not the ability to talk nor the push that is necessary in salesmanship, and consequently he was unsuccessful and unhappy in his work. Finally he was transferred to another department, in which his work was to purchase supplies and to decide how much and what was to be bought. This took a certain clearness of thought and good judgment with which he was well endowed, and it proved to be the place for which his natural ability fitted him.

Second, your choice must rest somewhat upon the opportunities in the work; that is, (a) the number of places to be filled in this line. This will depend somewhat upon the location of the particular business, somewhat upon the demand in general. For example, a young woman prepared herself to be a teacher of Greek, but when she was ready to teach she found that there were almost no schools offering Greek courses, consequently she was forced to get ready for something else. Similarly since the wide use of the motor truck, work in the wagon factories is becoming noticeably less.

(b) The wages paid. Are they living wages? While money is not the only return for work, and some people think that their ideals alone should be considered, yet it is every man's duty to support himself and those dependent on him, and he cannot always disregard wages in order to do the work that he prefers.

(c) The chances for advancement. Is there a future? Some occupations pay fairly well at the start, but there is no opportunity ahead. A young man was offered a position in another city at the same salary which he was then receiving. His employers offered him an increase of $400

a year. But older men, whose advice he asked, urged him to accept the new offer. Why? Simply because in the new city there was an opportunity to go on until he would have doubled his salary, while in the position he was then holding, he would probably never get beyond the increased salary he was then offered. Your future success demands that before deciding on your life work, you ask yourself the question: "Ten years from now, where shall I be?"

(d) The conditions under which you will work. Are they healthy, moral, etc.? Are the hours such that you are left a margin of time and energy for development in other directions? These are legitimate and necessary questions and as we take up the various occupations, we shall examine them from this point of view.

Third, you must consider whether you can get the preparation required for the particular work that you would choose. As we study the occupations, we shall learn that some of them require five or six years of preparation. This means that in order to maintain yourself during the period of training you must have a certain amount of capital. If you are without a doubt that your work lies in a particular direction, which demands a long period of preparation, it might be worth your while to make considerable sacrifice in order to attain it. If you have no money to depend on during this period, you will have to do without a great many comforts and take a longer time, earning your expenses as you go. Many men have accomplished much in this way but you should be very sure that you have chosen a work in which you are likely to succeed.

Now as to the plan and purpose of these lessons; it is to give a sort of bird's-eye view of the different industries, professions, and commercial businesses, with the idea of letting you see what is the demand for people in the different lines of work and what sort of ability is required and

also what are the opportunities for success. There are so many occupations that we shall of course be able to get only a casual acquaintance with them; but you will find references to material so that if you become interested in any particular line, you may look it up more carefully. For just as in our acquaintance with people, we do not really know them until we have learned many details of their daily lives, so we cannot be sure of an occupation, our real interest in and fitness for it, until we have learned its possibilities by thorough study.

As to the determination of your ability for a certain line of work, this is a very difficult problem. We may say that the majority of generally intelligent people could fit themselves for any one of many careers. Then there is the comparatively small number of people who have a special talent along some particular line, as for instance, in art or music. These form a class by themselves in which it is rather easy to discover whether or not you belong. Aside from this there are certain broad characteristics from which you might choose a class of occupations in which you could probably succeed. For instance, consider yourself in regard to the following points, and as you study each occupation, try to decide whether by nature you would fit in, and if so in what department you might do the best work. Are you strong or weak physically; more skilled in mental or in manual work; fond of indoor or of outdoor life; inclined to direct others or to follow directions; skilled in thinking out original ways of doing things or in following what has been laid out; able to concentrate on one thing to the exclusion of others or to scatter your attention over several things at the same time?[1]

As we look at each occupation we shall try to discover what qualities in general are desirable: but it must not be

[1] Classification taken from Hollingworth, *Vocational Psychology*.

thought that to enter any particular kind of work one must have all of the qualities mentioned, though there may be some without which it would be unwise to try it. Again, certain qualities might fit a man for some special division of that work.

In the matter of pay, conditions will differ much in various parts of the country. The statements that are made must be considered as only approximate, as, in the first place, they are likely to change from year to year, and, in the second, they are not uniform over the country. You can get only a general idea of the businesses that have big opportunities, of the professions that are limited as to income, and of the degrees of pay according to advancement. As you look more thoroughly into the work in which you are particularly interested, you will be able to find out more accurately about the remuneration. It will be comparatively easy to do this in the case of your local industries.

As we discuss the opportunities, advantages, and disadvantages, you must bear in mind that there is no occupation which does not have both favorable and unfavorable aspects. While your study should help you find that which will be interesting and satisfying to you, still you must remember that in no work will you find everything rosy. There will always be times when your life will seem monotonous, on the one hand, or too strenuous, on the other. You will perhaps look at the advantages of other occupations and wish that you had chosen differently. Many men who have succeeded well have done that. One of the greatest surgeons longed for the specialized field of medicine; a renowned actor wished that he had gone into business; while a kinsman of his who had grown rich in a commercial position, pined for life on the stage.

How can we account for this all too common discontent? Before answering this, we should remember that there are

a great many successful people who are contented and satisfied with their work. And this fact with a little thought may help us to see the reason. There is always a price to pay for success, and discontent comes from keeping one's mind on the price rather than on the reward. Before making his choice, one should count the cost, that is, should look the disadvantages squarely in the face and decide whether the compensations and rewards would make him willing to accept these. There is no harm in changing one's decision in the course of investigation, but when once started in work it is well to make up one's mind that unpleasantness is to be found everywhere, and that the man who is worth anything is willing to put up with that for the sake of what he is trying to accomplish.

As you study the occupations, you will feel how closely they are all related, how not one could exist without the help of many others; and how when they are taken all together they make up the life and progress of our country and of the world. You will be confused, perhaps, when you find the man of science saying that the most wonderful thing in the world is science, that all our life is based on it, and that even the horrors of war are merely crimes against science; then the lawyer will tell you that the life of the scientific man is narrow, that his own profession is the one that holds the world together; the business expert says that were it not for commerce, there would be no progress, no agriculture, no manufacturing, that commerce has inspired inventions, and has brought improvements within the reach of many people; and then comes the railway magnate and declares that the most important business of all is transportation, and that commerce, agriculture, and manufacturing would cease without the railroads.

The following diagram will show you the relationships of the various occupations. As you see, the underlying

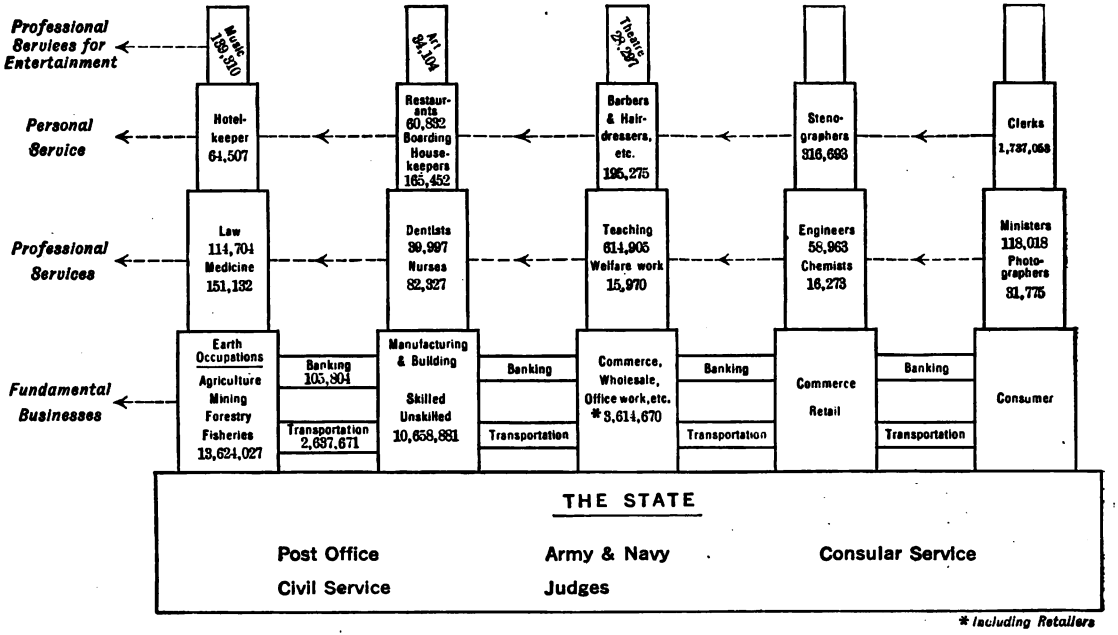


DIAGRAM OF OCCUPATIONS

Showing the interdependence of the occupations and the number of people employed in each. Altogether there are 38,167,336 engaged in gainful occupations.

[Figures from Statistical Abstract of the United States Census Report, 1916.]

support of all is the government, federal, state, and municipal, with its great mail service for the convenience of business; the army and navy for its protection; for the same purpose, firemen, detectives, police, lifesavers; judges for the settling of difficulties; consuls to represent our interests in foreign cities, and countless other civil service employees.

Upon the foundation of the state is built a series of important businesses. Necessary to all the others are the earth occupations, concerned with things that grow or that are found in the earth. These include farming, forestry, fisheries, and mining; there are over twelve million men in America who are busy in this kind of work. But not much would be gained from the productions of this industry, were they not sent to the manufacturer, the builder, and the packer; these make the second great industry, employing over ten million of skilled and unskilled workmen. But these in turn must sell their products, and so we have first the great wholesale business, and then the numberless retail stores and salesmen, altogether keeping over three million people busy. In order to get the raw products of the earth occupations to the manufacturer, and in turn to transfer his products to the wholesale warehouses, and from them to the retail stores, and finally to the consumer, there has grown America's system of transportation with over two million men to keep it in action. There is moreover another line of connection between the industries. Every undertaking must have a financial backing, hence the great banking business, which offers occupation to over one hundred thousand people.

Thus we have what might be called the great fundamental industries, giving occupation to over thirty million people. But to carry on these businesses, and also for the help and comfort of these thirty million people and their

families, there is needed much professional and personal service. Consequently in the diagram you will see built on these fundamental occupations, many professions, such as the law, medicine, teaching, and engineering, etc. Helping all of these we have hotel-keeping, journalism, clerking, stenography, and more distinctively personal service, such as hairdressing and hair-cutting. Then comes a most necessary kind of occupation, that of supplying relaxation and enjoyment to those engaged in strenuous work. Among those who render professional services for entertainment are the artists and actors, the dramatists and authors, the singers, pianists, violinists and all musicians.

While in general, this represents the great work of the world, there is much overlapping and interweaving, so that every occupation is dependent on many others. This should make us feel that there is a dignity and importance attached to all work, and that every one who chooses his occupation well, and does his work successfully is not only making the most of himself, but is serving his country and humanity.

In this age of the world there is more or less of opportunity for girls and women in almost every line of work. While in certain fields they have unusual opportunities, and in a few seem to have no chance at all, yet on the whole it is getting to be more nearly impossible to distinguish the work of men from that of women. Moreover for the sake of a broad understanding of life, it is well for both men and women to know all that they can about every sort of work.

Before considering individual occupations, you can probably make your initial choice between two great groups; the first, those that we think of particularly as business and industries, including

I. Commerce
   Selling
   Accounting
   Clerical Work
   Stenography
II. Manufacturing
   Building
III. Railroading
IV. Agriculture
V. Banking

The second great group includes what we call the professions:

I. Law
II. Medicine
III. Teaching
IV. Engineering
V. Literary work
VI. Scientific work
VII. Artistic work

In general terms, most people choose between the business world and the professional. In the former, there is on the whole more opportunity to make money, in the latter, the love of study is a requirement, and devotion to work must outweigh the desire for financial gain.

EXERCISES

1. Describe the case of someone you know who has seemingly drifted into the wrong kind of work. Do you think this is merely an instance of discontent, or can you give definite reasons for your opinion?

2. Do the same in regard to someone who is in just the right place. Why do you think this?

3. Can you think of any rules, besides those given in this chapter, by which one might be guided in choosing an occupation?

4. Give examples to illustrate the six principles of choice enumerated in the text.

5. Write as many arguments as you can to prove that every girl should plan her life career. Are there any arguments against this?

6. Make a list of twenty occupations, telling in each case how long you think it would take to get the necessary preparation.

7. Copy the list of characteristics on page 9 and after each qualification mention work for which it would be useful.

8. The statement is often made that people in business have larger incomes than those in the professions. Would you modify this statement? Explain how.

9. In your note book, make a list of books and magazine articles that you have come across which you think would help in considering an occupation. Leave two or three blank pages after this list so that you can add to it from time to time through the year.

10. In what occupation do you think that you would be most likely to succeed? Why do you think so?

Question for Debate: The manufacturing group of occupations is more essential for the well being of the world than is the commercial group.

SUGGESTIONS FOR FURTHER READING

REID, WHITELAW. *Careers for Coming Men.* Saalfield Publishing Co.

ALDEN, CYNTHIA. *Women's Ways of Earning a Living.* A. S. Barnes Co., 1910.

NEARING, SCOTT. *Wages in the United States.* The Macmillan Company, N. Y., 1911.

PARSONS, FRANK. *Choosing a Vocation.* Houghton, Mifflin & Co., 1909.

Statistical Abstract of the United States Census, 1916.

American Community Life Leaflets. Bureau of Education, Department of the Interior, 1917, 18.

BENNETT, HELEN MARIE. *Women and Work.* D. Appleton & Co., 1917

Reports of the United States Bureau of the Census.

GOWIN and WHEATLEY. *Occupations.* Ginn & Co., 1916.

LASALLE and WILEY. *Vocations for Girls.* Houghton, Mifflin & Co., 1913.

WEAVER, ELI W. *Profitable Vocations for Girls.* A. S. Barnes Co., 1915.

WEAVER and BYLER. *Profitable Vocations for Boys.* A. S. Barnes Co., 1915.

LEAVITT, FRANK M. and BROWN, EDITH. *Elementary Social Science.* The Macmillan Co.

LUTZ, R. R. *Wage Earning and Education.* Cleveland Foundation, 1916.

TWOMBLY, FRANCES D. and DANA, JOHN C. *The Romance of Labor.* The Macmillan Co., 1916.

LAPP, JOHN A. *Learning to Earn.* Bobbs-Merrill Co., 1915.

MARTIN, ELEANOR. *Vocations for the Trained Woman.* Longmans Green Co., 1914.

Employees' Welfare. From Monthly Review of Bureau of Labor Statistics. 1917.

CHAPTER II

GOVERNMENT SERVICE

Although this is a branch of work which is not often thought of by boys and girls in high school, we shall discuss it first of all because, as you noticed in the diagram, it is, in a way, the foundation upon which all the other occupations are built. As we look at some of the details it may not seem that this is so; for government service, when we consider not only the nation but also the state and the city, covers many kinds of work from that of the man who drives the garbage cart to that of the President of the United States. But between these two extremes, in neither of which we are likely to find our life work, there are positions of all sorts and grades, by means of which our citizens and our industries are protected, business is facilitated, and conditions generally are improved. Take, for instance, the one item of the mail service, and in an instant we get a glimpse of what it would mean if this one department should be crippled. In this single branch, according to the census of 1910, the government employed 119,554 people.

Let us glance at some other lines of government service just to see how fundamental it is to all business. Take, for instance, the policemen, the firemen, and health officers of all sorts. Immediately you see their usefulness in the protection and welfare of every one. In quite another field is the immense amount of construction work that is done by the government. Then there is a large

army of stenographers, typists, clerks, and secretaries, in Washington, in the state capitals, and in fact in all parts of the country. At first glance these may not all seem to be of such fundamental importance, but they are like privates in the army, it would be impossible to carry on the great business of government without them all.

Another group that might interest you is that of the people who are making our money. Take the paper money which is made by the bureau of engraving and printing. This is a great printing house with its electrical presses and other mechanical devices. The bills are printed on large sheets with a certain number of bills to a sheet. Many women are employed counting these sheets; for a very strict account must be kept of every one printed. We are told that in one day enough paper money is manufactured to cover a space of five acres, enough postage stamps to cover six acres and enough revenue stamps to cover eleven acres. In this one department there are 4,000 employees; and of these there are 200 more women than men. These statements refer of course to normal times. When a special war revenue must be raised, there is an increase of work; but at such times all industrial conditions are greatly changed.

Again, there are the people employed in the interests of public justice; not merely the judges who must of course have a legal training, but many other officers, as for instance, probation officers, employees of the juvenile courts, police matrons, detectives, and somewhat along this line, superintendents for all sorts of public institutions. Most of these serve the county or state rather than the federal government.

Then there is the entire consular service, which offers opportunities for boys to help in looking out for the business of the United States in other lands. Young

men who are going into this work usually take a special course in some university. They must make up their minds to a life in foreign lands, where conditions are quite different from those at home, and where they will doubtless at first be very lonely. But there is an opportunity here to see other countries and many men have become much fascinated with the work. In accordance with a recent bill, consuls are appointed to a certain grade of service. When they have reached a higher point of experience and ability, they are advanced to a higher grade of service; so that the consular field has become a desirable one for the able and ambitious youth.

Along many lines of business the government employs expert advisers. For instance, in the Department of Agriculture are soil experts, dairy experts, forestry experts; in the Department of Pure Foods, there is a demand for men skilled in chemistry; in the Bureau of Standards, for men trained in physics; in the Department of Geology, there is room for boys interested in that study, while in many departments experts in mechanical and architectural drawing will find a place.

We have not yet mentioned a most important division, that of the army and navy. For these alone, a whole book might be written on the qualifications, training, and opportunities. The work in the ranks, especially in time of peace, does not have the romance and glamour that many boys imagine. The training is hard and the life monotonous. Many who are attracted to the service, prefer to enter by way of an officers' training school, West Point for the army and Annapolis for the navy, which means that they would start in with the rank of second lieutenant. This statement of course refers to times of peace. A state of war is so abnormal that all occupations are on a different basis. The entrance to the

military and the naval academies is through appointment; and the best way to get information regarding possibilities in your district is to get into communication with your congressman. Besides the ordinary officers who must of course be leaders of men, the army and navy both require many sorts of engineers, builders, doctors and clerks. This might be illustrated by the board of advisers appointed by Mr. Daniels, Secretary of the Navy. This board was headed by Mr. Edison and is made up of electrical experts, authorities in astronomy, in geography, in mathematics, in physics; of inventors; and of men prominent in the great business of manufacturing. This helps to show what we shall learn more and more as we proceed, that all the occupations are interwoven and dependent upon each other; and that those who aspire to be leaders in any of them, must be experts with long and severe training.

Qualifications

The qualifications for government service differ as much as do those needed in the whole field of occupations. We may perhaps state certain general requirements, but after that you must add to and modify these according to the special line that you wish to enter. Government employees who are not in the army or navy are included in what is called Civil Service. About two-thirds of the civil service positions are "classified," that is, they must be entered by means of the examinations. The other positions are obtained either by election or appointment. States and cities have systems similar to that of the federal government with, to some extent, parallel positions. Now, let us consider one or two general characteristics besides the ability to pass the examinations; for this demands a rather definite preparation.

One characteristic that is required in almost all govern-

ment work is that of exactness. It is the strict insistence upon this point that has led to what is often complained of as too much "red tape." But even exaggerated care is necessary in order to keep definite records in such an immense and complicated system. If you are impatient of details, and are incapable of being careful and painstaking down to the minutest point, you would better seek employment under some master other than the United States Government. Short cuts to results are all right in many places, but not in a government office. This requirement comes to the front even before one is allowed to take the examination; for an application that fails to be in exact form is not considered, but is returned for correction.

Two qualities are necessary as a means of accomplishing a large amount of exact work in a given time. These are concentration and quickness. One can do almost any kind of work better if he has the power of keeping his mind on that work to the exclusion of everything else; but this is particularly true of statistical work, filing, and bookkeeping; and much of the civil service work is of this sort. A woman who has a well paying government position is able to do highly efficient work because she has trained herself to know nothing of what is going on around her while she is working. The other quality, quickness, is likely to come with concentration and it is easy to see how necessary it is.

Also one must come up to certain standards before he is eligible for examination. He must be in good physical condition, and must not drink intoxicating liquors to excess. More and more the character and habits of the applicants are being considered. Some cities have appointed bureaus of investigation to find out whether the person has lived a clean, honest, temperate life.

Preparation

The preparation for the Civil Service examinations may be described quite definitely. Here there are first of all the "grade examinations." These are in the fundamental branches, such as arithmetic, spelling, grammar, and geography, and their difficulty is scaled according to the grade of the position you are seeking. Besides these, there is an examination in the specialty in which you want your position, i.e., stenography, medicine, science, or engineering. A good authority says that for many positions general information is an essential. This should include current events, the organization of the government, important events and persons in history and literature, and information in regard to the geography of the earth's surface. Preparation for the grade examinations and this general information may be gained from your high school course. For those who are planning to work into the more responsible government positions, a college course is most desirable. The majority of the congressmen at present are college graduates, while almost all of the appointive offices are given to men with at least an equivalent education. Not the old-fashioned sort of a college course, with much Latin and Greek, but the new, broader, more practical work, with political science, government, history, and English, helps to fit a man for a career connected with the government. Of course for the many positions in scientific research or engineering, a particular technical education is required.

If you are interested, write to the Civil Service Commission at Washington, D. C., for the latest *Manual of Examinations,* which is published semiannually. This will give you minute information as to how to proceed if you wish to try any of the examinations. Examinations

in all lines for which there are vacancies are held twice a year in every state in the union. After the examination has been passed, the candidate is put on the eligible list, and from this list appointments are made as there is a demand. After the appointment, the employee is on probation for six months in order to prove his fitness. After that the position is practically secure as long as he is capable of doing the work. Information in regard to the state or city positions may be had by writing to the state capitol or city hall respectively.

Opportunities and Advantages

First, if you are interested in government service, you would like to know how much chance there is of your getting into it. In the last manual of examinations two and a half pages are filled with a list of the examinations to be given. The following table taken from the same book will also show something about the number of people employed by the government.

In June, 1915, there were the following number of people working for the United States Government:

In Washington, D. C.	34,430
Outside of Washington	421,259
In Isthmian Canal region	20,674
Total	476,363

From July 1st, 1913, to June 30th, 1914, there were

215,587 people examined;
147,256 people passed;
68.4 per cent. of those examined passed;
41,935 people appointed to positions;
28.4 per cent. of those who passed were appointed.

Take then the year for which the figures were given here: It would seem that 215,587 people wanted to get

positions, only 68.4 per cent. of these were able to pass the necessary examinations; and of these only 28.4 per cent. were appointed to positions. Ability to do well in the examinations is a large factor in the matter of appointment; for when there is a vacancy, eligibles are selected largely in the order of the grade they have made. So if you will think over once more what we have said in regard to preparation, it may help you to decide whether you can bring yourself up to the required standard. As you will see if you look over the manual, other considerations come in, but on the whole, appointment depends upon merit. The best plan is to study the various departments and decide what goal you would like to reach. Then begin to plan and to prepare for the position that you would like to hold years from now.

Second, what pay might you expect to receive? In general, one does not go into government service because he will receive better pay than elsewhere. There must be then other inducements, and these we shall consider soon. Again, the manual will give you a list of the minimum and maximum entrance salaries paid to the appointees in each sort of position filled in a given year. In the list given in the spring of 1917, the salaries ran from $600 to $2000 a year.

The following table, taken partly from the list and partly from Mr. Foltz's book on Civil Service, will give you an idea of the salaries paid in just a few of the positions:

Position	*Minimum salary*	*Maximum salary*
Library assistant	$ 720.00	$ 1,000.00
Physicians	480.00	1,800.00
Stenographers (men)	900.00	1,000.00
Stenographers (women)	720.00	

(The foregoing are entrance salaries, the following include those paid after promotion.)

Railway mail clerk	$ 800.00	$ 1,600.00
P. O. clerks and carriers	600.00	1,200.00
Clerks with library duties	1,200.00	1,800.00
Statisticians	1,200.00	3,000.00
Consular service	2,000.00	12,000.00
Patent investigation	1,500.00	2,700.00

For clerical positions, the salaries run from $900, that of the beginner, to $3000, that of chief clerk. Now, a very successful business man may make $25,000 a year, and such a man may look down upon civil service positions. For scientific work in the Department of Agriculture, men are paid from $3000 to $4000 a year, while for similar work outside of the government, they may get from $6000 to $10,000. Superintendents of large farms and ranches are paid from $2000 to $10,000 a year, while for a similar grade of work for the government they would receive $4000. These last statements refer to men whose work and pay are above the average. The ordinary man gets rather more from the government than elsewhere. For instance a man who does good, faithful, and not particularly original work will get under the government, about $1800 a year, while the same man in business will probably earn about $1200.

One more thing may be said about government pay, it is sure and steady. While wages in the industrial world fluctuate from time to time according to the conditions of business, the government keeps a steady even rate, and one has the advantage of a feeling of security.

Third, what about the question of the future? To what can a boy or girl going into this kind of work look forward in the coming years? First, civil service is a most excellent stepping stone for certain kinds of occupa-

tions. Scientifically trained young men will sometimes take positions at a very low pay, merely for the sake of the experience. As we shall learn later, a splendid field is opening up everywhere for the scientist. Especially is this true of the expert in agriculture. After graduating from an agricultural college a young man may go into government service where he will have excellent training at no expense and be ready for a good position in connection with the farming interests of the country.

The patent department is every year losing men who are offered positions in the firms of patent attorneys. With a law education and some scientific training, a young man has every chance of a most excellent opening.

For a political career there is nothing better than to be able to study the government at first hand. After a theoretical education, much can be learned in a practical way, and many a young man, after a clerkship in one of the departments, has gone home and run for a political position, and has thus found a way to do larger and more responsible work in the affairs of the nation.

There is one very decided advantage for the young man who plans to go into a profession but who cannot afford to get the necessary education. This refers to those working in the city of Washington. The hours are short, closing at 4:30, and every year there are thirty days of vacation with pay, so that there is ample time for study for one's future work. Because of this condition, several colleges, which are situated in and near Washington, have arranged their courses so that work may be taken after office hours, and a young man may, while earning his living and enough for his tuition, take a law or medical course and even get a start in his practice.

On the other hand, one who has made up his mind to go into the commercial work of business, would better not

start with civil service. The business methods used by the government are quite different from those used in the business world, and it is generally conceded that a government employee becomes unfit for a purely business career.

Now as to the permanent values of this work aside from the money values. While financially it cannot be said to offer great inducements, from the point of view of service and reputation the returns are great. As we said at the beginning, the government is the foundation and support of all other business; it is quite worth while to feel that one has his hand in such a big affair. Every cog in the wheel, every bit of the machinery of government is essential to the safe conduct of the whole nation. And one does not need to be a mere bit of machinery. Good suggestions for new systems are welcome here as in other lines of business, and when it comes to the scientific experimental laboratories, there is a use for any amount of knowledge and ingenuity. From the department of agriculture advice is given freely to all parts of the country, and thus blights have been destroyed and crops increased.

The greatest inspiration comes from this definite opportunity to be of service to the world, but there are in government service other advantages especially to a certain type of men. To those who care more about living than making great wealth, there comes the chance to make a comfortable and sure income with short hours, and long vacations, so that there is time to live and to pursue an avocation, something that in the long run brings more happiness than great wealth and what is generally called success.

But before we stop we must also face the disadvantages. In an ordinary position, one is in great danger of losing his individuality; in a sense he is just a part of a big

machine, and no matter how well he does his work he is likely to stay just where he begins unless he makes a definite effort to advance. The very nature of the routine work is likely to kill the desire to advance, but it is entirely possible to overcome this tendency and by the use of initiative to work oneself into a desirable position.

Now as to the opportunities for women. Women are eligible to less than 10 per cent. of the civil service positions; but when they are once appointed, they have the same chance as do the men. Their work is largely in the following lines: stenographer, typist, departmental clerk, expert counter, statistician, translator, librarian, forewoman, superintendent, inspector. Pay for women is almost always more than for similar work elsewhere. The following table will give you some idea of the difference:

	Positions of manual skill	*Clerical*	*Executive*
Government ..	$9.00 to $18.00 a week.	$15.00 to $30.00 a week.	$1,600 to $2,000 a year.
Elsewhere	$6.00 to $10.00 a week.	$10.00 to $15.00 a week.	$1,200 to $1,500 a year.

The hours for women are good, they are well treated, and work under pleasant conditions.

To sum up, much of the government service demands the sort of skill and training that is demanded in other occupations. These requirements will be discussed as we go on with our course. Full information along any particular line may be obtained by writing to headquarters. Civil service laws have done much to make stability of pay and tenure of office secure. The lines that are particularly different from other businesses are the army, the navy, and the consular service. But all lines of service for the state, whether they be the post-office, civil

service, the army and navy, judgeship, or the consular service, make in a way a foundation upon which all the great occupations are built and because of which they are possible.

EXERCISES

1. a. Make a list of as many positions in government service as you can think of. b. Check those in which you think you might succeed. c. Check those which you think help out in the work of your community.

2. Give three illustrations of the statement that persons in government service must be exact.

3. Why are examinations required before one may have a civil service position? What is this system of appointment called? On what basis were positions filled before it was adopted?

4 Study a *Manual of Examinations*, and then write an account of the proceedings of a boy who has determined to be a post-office clerk.

5. From the same manual and also from the notices posted in your local post-office, decide for what sort of positions there is the greatest demand.

6. What is meant by a political career? How do men usually enter it? Do women ever do anything of this sort?

7. Find out about some special work that the Department of Agriculture does for the country, and be ready to tell about it in class.

SUGGESTIONS FOR FURTHER READING

LEUPP, FRANCIS E. *How to Prepare for a Civil Service Examination.* Hinds, Noble, and Eldridge, 1899.

FOLTZ, E. B. K. *The Federal Civil Service as a Career.* G. P. Putnam's Sons, 1909.

Manual of Examinations. United States Civil Service Commission. Washington, D. C.

Report of United States Civil Service Commission, Washington, D. C.

CHAPTER III

EARTH OCCUPATIONS

Now that we have had a glance at the great machinery of government that protects and backs our industries, let us look at a series of fundamental occupations that seem necessary to the very existence of any people. First of all, we shall consider the one group that is absolutely indispensable, namely, the earth occupations. The name defines itself; it refers to those occupations in which the products, though given to us generously from the earth, are obtained and vastly improved by man's hands and brains. These include agriculture, forestry, mining, and fisheries. This group employs more people than any other; the 1910 census report tells us that there are engaged in agriculture, forestry, and mining over thirteen and a half million people. This means over a third of those engaged in gainful occupations. So judging from the number of people that it takes to obtain and perfect these earth materials, this group of occupations is of vast importance. It would seem almost fair to call it the main business of the American people. Of its four branches, agriculture including forestry, is the most important. Even under the term, agriculture, we include many specialties, such as farming, dairying, floriculture, stock-raising, poultry raising, market gardening, and fruit growing. So important is the scientific development of this industry considered, that the President of the United States has in his cabinet a Secretary of Agriculture, a dignity that is enjoyed by no other occupation.

AGRICULTURE

Why, aside from the number of people that it employs, is the business of farming so important? In the patriotic appeal of 1917 when we entered the war, we heard as much about the call to farms as of the call to arms. People were urged to have miniature farms in their own yards, schools used vacant fields, and railways gave land near their tracks, all to increase this tremendous occupation. But when we consider that it means the feeding of over a hundred million of our own people, the production of material from which our clothing and dwellings are made, the supplying of much of the raw material for the manufacturer and of products which keep alive the business of transportation, when we consider these things, the earth occupations seem to us almost colossal. Take the agricultural branch of this industry, and let us consider what sort of people could well go into it for a life work, what opportunities it offers both for the present and for the future, and what are the advantages and disadvantages experienced by those who have tried it.

Qualifications

In general, we might say that one going into agricultural life should have the following tendencies:

1. He should be of an active and practical temperament, and should belong with those people who can do things with their hands. On the farm, man meets problems at first hand. In spite of the recent scientific discoveries, he is in reality wrestling with nature and must be able to manage situations that he will not find described in books.

2. He should enjoy working with nature, particularly in such matters as tilling the soil and caring for crops; he should have a liking for animals and be able to get the

best results from them; and, a quality that goes with both of these, he should love out-of-door life. The whole type of life is so entirely different from that lived in the cities, in offices, and in factories, that one who has not been brought up on a farm should be very sure that he would fit into the actual outdoor work before he undertakes it. A boy who lived in Chicago and helped to support himself by selling newspapers, had an opportunity to work on a ranch in the West. It seemed to him that it would be bliss; he was strong and could stand the work; had manual skill and surpassed all on the ranch in building sheds and making fences. He was, however, lacking in one important point; he did not know how to manage animals, he lost his temper and beat and injured so many of the cattle and poultry that he finally was dismissed and had to go into some other sort of work.

3. He should be able to do hard physical work. While outdoor life is healthful, yet one who is not accustomed to this sort of work is likely to find it too much for him. The boy who has been raised on the farm and who wishes to remain in that occupation doubtless has naturally these three characteristics; but the city or town boy must give conscious attention to them, and must be quite sure before undertaking this entirely new life. One town bred boy was so much interested in the high school courses in agriculture, that he went to the state university to prepare to be a farmer. Circumstances forced him to leave college in the spring so he got work on a farm in order to try out his adaptability. Before the summer was over he had decided that farm life was not for him, so he went into quite a different line of work.

So much for the qualifications that are distinct from those required by other occupations. In common with certain others he should have also the following:

4. He should be interested in machinery and, to a certain extent, in engineering. On account of the use of machinery there has been a decrease in the amount of farm labor demanded. But the fewer men employed must be better able to understand and use farm implements and machinery. It is said that in the last fifty years, particularly in the production of grain, the saving in the cost of labor per year has reached $681,000,000. Moreover the number of people engaged in agricultural pursuits is likely to decrease still more. Men who would succeed must understand many mechanical problems. While professional engineers will put in systems of irrigation, will plan silos, machinery, smudging outfits, these things must be maintained and improved upon by the farmer himself, and so a mechanical turn will stand him in good stead.

5. If he is to own or operate a farm himself, he must have the ability to manage men. We shall find in every occupation that this is a necessary quality for the man at the top. Perhaps it is a quality that it is not so necessary to decide upon at the outset; for into whatever business you enter, you will start as one who obeys orders, and it is only thus that you will learn whether you have the ability to direct others. However, while in other lines, one rises rather slowly until he is appointed or elected to an executive position, in farming, it is a matter of getting enough capital together to own or rent a farm. The farmer is thus likely to be obliged to manage men sooner than those engaged in other lines of work.

6. He must be a good business manager, for he must find out the best way of selling his crops, taking into account his access to the market. Indeed, the farmer must be a sort of cost accountant, who is able to figure what it costs him to raise a certain commodity, including labor, machinery, taxes, improvements, seed, and transportation

Courtesy International Harvester Company

In the future, all farmers will probably plow in this way

to the market. In this day of cooperation, farmers are organizing for the transportation and sale of their products. For example, in the towns of Southern California, you will see orange packing houses to which the orange men send their fruit and where it is washed, sorted, packed, and shipped. The profit is divided pro rata, and the business is conducted in a better way than it possibly could be by one man. No matter what phenomenal success a farmer may have, if he has access to a poor market only he has wasted time and money.

Preparation

In going into this work today, a scientific training is decidedly needed. If possible one should get a college training in scientific agriculture, horticulture, stock raising, or in the particular line which one desires to enter. This is the day of scientific farming and one needs the best training before he can hope to succeed. A great advantage of a college training is that by living and working where many branches of agriculture are taught, one may find out whether or not he is inclined to any specialized form.

Although the college training is by far the best preparation, one who cannot afford that can gain much by reading the agricultural papers, attending Farmers' Institutes, and attending the short courses that are given for the benefit of farmers in all state agricultural schools.

It is sometimes said that farmers are naturally conservative and that many of long experience scorn what they call the book learning of the schools. But the day has come when most farmers realize that the one who gets ahead must have a scientific training, and those who do not realize it are falling behind in the race. It is the men with training whose hens lay the most eggs, whose

beets yield the most sugar, whose plants and trees are saved from blight and pests, whose corn yields the most to the acre. Some authorities say that besides scientific training a farmer should have manual training. Certain it is that there are a thousand and one things that he must be able to do with his hands and he will find that a natural and developed manual skill is a great asset.

Opportunities and Advantages

There seems to be ample opportunity at least to get started in farming. At many seasons "extra men" are wanted, and farmers are glad to employ even inexperienced laborers. Then a man who could prove his worth would have no trouble in getting permanent work in some kind of farming, in some part of the country. In talking to a number of the farmers of Illinois, we have learned the following in regard to the wages in that part of the country. The average farmer pays to boys at the beginning about $25.00 per month; this is increased each year at the rate of $2.50 per month. This pay is not so low as it seems when we consider that it includes the regular living expenses. Young men starting out are tempted to spend this amount for amusements and luxuries, but if they are willing to save, in five or six years they could lay aside $1000 or more. With that amount if a young man had established a good reputation, he might be able to start on a farm of his own. This is what some farmers say; others think that he would better wait ten years longer or until he had accumulated a capital of about $4000, when he could start rather comfortably on a farm of eighty acres. One man added to his list of necessary requirements: "A good wife and good health."

From the report of the agricultural survey of Tompkins Co., New York, it appears that the college graduates

working on farms receive higher wages than the high school graduates, and high school graduates higher than those from the grammar school. Experience in other places is consistent with this report, so that if possible to do so, it would seem to pay financially to get a thorough preparation before starting.

You can see that working on a farm as a laborer for wages would not pay for any great length of time. It is merely a way for a young man to get a start. With the necessary training and a little capital, the average man will make a good living at farming, even if he does not lay up a great sum besides. The specially able farmer will reap a rich return from his labors. A great deal depends upon raising the right crop in the right place. There is a famous apple orchard on a ridge in Virginia which was planted fifty years ago. No one had thought that this particular place was good for raising apples, but this orchard grew and flourished, until now it has brought in many thousands of dollars. When the success of this one was seen, other farmers began planting orchards, and that part of the country has become famous for its apples.

Again, the successful farmer must know how to use every acre to the best advantage, and how best to dispose of his products. For instance, much of the grain, particularly the corn, that is raised is sold not as grain but as meat. The farmer has learned that he can make more by raising cattle, feeding them well on his grain, and then selling them as live stock to the packers.

A good deal of money has been made from raising poultry. But seldom does a farmer go into that business exclusively. Only in the last few years, are they beginning to realize that much money can be made by paying especial attention to this industry. In 1911, the eggs and poultry raised in the United States were worth $750,000,-

000. To quote J. Russell Smith: "Hence the output of the poultry yard is more valuable than all the gold and iron produced in the United States. . . . The application of the laws of animal breeding and feeding causes large increase in the average egg output. The average egg production from our 300,000,000 hens is about 80 per hen per year. Test pens of fowls given special care have averaged 240." This will give some idea of the opportunity in just this one line for the trained farmer.

But aside from owning his farm, there is another opening for the trained agriculturist. Many experts are employed as managers of creameries or of farms or ranches belonging to wealthy persons. These are paid well, often from $2000 to $10,000 a year. A young man just graduating from a college of agriculture was put in charge of a large stock farm, which he managed excellently. In a few years he was able to own a farm, well stocked with a fine breed of cattle.

Again, there are many specialties connected with farm life, and one going into general farming can often find out for what particular line he is fitted. For instance, one young man after receiving his training started out on a large cattle ranch. There he soon learned that he was especially interested in veterinary surgery, and that with adequate preparation, he would have no difficulty in getting all the work that he could do. Accordingly he went to the city and took a three years' course in that line. After that he moved to a small town within reach of several ranches and has now developed a large practice.

Already in connection with government service, we have spoken of the demand for scientific experts in agriculture. The Department of Agriculture is constantly distributing information in regard to new devices and

methods in farming, and farmers in all parts of the country may write for and obtain advice free of charge. There are in many parts of the country experimental farms, managed and developed by experts. In some states, a whole county will employ an expert, who has an office in one of the larger towns, and gives his entire time to advising and furthering the interests of the farmers of that district.

So to sum up, agriculture offers many openings for the active, practical, healthy boy who enjoys outdoor life, and has a liking for growing things.

But aside from the point of making a living and even more than a living, what inducements does this country life hold forth?

First, as it is an outdoor, active life, it gives the basis for good health. Indeed, some of the lighter occupations, such as fruit or poultry raising, are recommended for those who are not in the best physical condition, for those, for instance, who would not thrive in offices. The outdoor exercise gives a good appetite, and the farmer is almost free from the nervous tension and confinement of the city.

Second, in a sense, the farmer is the most independent of men. He is his own master and may work according to his own rules and plans. He is not tied down to the direction of others, but has full scope for the expression of his individuality. He may experiment and use new methods just as far as he himself thinks best.

Third, he alternates periods of long and strenuous work with periods of light work, so that at intervals he has time for outside interests, for reading, and recreation. And even in the heavy season, there is a great variety in his work so that he need never complain of monotony.

Fourth, farming by no means belongs to the enervating

occupations. The man who gets ahead must use his brains and thus he is bound to grow. Agriculture is a growing profession and there seems no limit to the improvements that are ahead and to the experimenting in which every farmer may have his share. Some one has spoken of farming as "the challenge of the difficult" and another calls it the "moral equivalent of war." There is a great advantage in having work that gives much to overcome and conquer, and the many problems that arise are stimulating to the intellect. But not every farmer has the energy or the ability to take advantage of these opportunities, and that is the reason that so many do not keep up with the procession, and that their farms are run down and their methods out of date. James J. Hill said that only 1 per cent. of the farmers of the Middle West kept in touch with progressive ideas. If this is true, how much opportunity must there be for the man who is able and willing to use his mind.

Suppose we look at a few examples of what science has done for agriculture. Almost every one knows of Luther Burbank and his experiments in plant life; how he has made a new potato, a new berry, new oranges and many other unexpected fruits. Mr. John Dryden, Chief of the Department of Agriculture in Canada, has made a new breed of hogs for the purpose of getting more and better bacon.

Let me quote a paragraph from a good authority to show how brains are conquering pests: "The history of peach growing in the Michigan district gives an excellent example of the dependence of industry upon science. A mysterious, incurable, and fatal disease called 'the yellows' spread from tree to tree. Unchecked it worked destruction in the west Michigan peach belt and reduced the number of trees in one county from 600,000 in 1870

Courtesy International Harvester Company

Present-day farming requires fewer horses and fewer men. These bundles have not been touched by hand.

Courtesy International Harvester Company

With this tractor the farmer is breaking up the surface and incorporating the stubble with the soil

to 30,000 in 1884. This reduced the value of land to $10 or $20 per acre when it had been worth from $50 to $100, and brought communities to the verge of bankruptcy. At this point it was discovered at the State Agricultural Experiment Station that if every tree having the yellows was removed when the disease was first discovered, only 1 or 2 per cent. of the trees per year would be killed, and the peach industry could thrive. After the adoption of this precaution the county that had but 30,000 trees in 1884 had over a million in 1906, and throughout the peach belt prosperity again prevailed." [1]

In Illinois, a contest was held to see what difference it made when the farmers carefully selected the seed for their corn. It was found that the field where that care was not taken, produced 48 bushels to the acre, while the one with the selected seed produced 70 bushels to the acre.

One has but to ride on the train through Southern Arizona to get a glimpse of what irrigation has done. For miles one sees desert sands on which practically nothing can grow, relieved only by the mirage in the distance. Suddenly he is in a most fertile country with flourishing fields of grain and orchards of fruit trees. Cattle are grazing and there are acres of truck gardens. This miracle has all been wrought by irrigation. Just out of the city is a beautiful ranch, a veritable fairy land, where all sorts of rare fruits and vegetables are growing. A man who has made his fortune in big cities but who felt the lure of the country, is using his brains and his wealth to show what can be overcome and accomplished on a farm.

Fifth, besides the stimulus of overcoming difficulties and discovering new methods, the farmer may have the inspiration of feeling that he is a part of a great movement.

[1] From J. Russell Smith, *Commerce and Industry*.

Roosevelt in his administration appointed a Commission on Country Life, which has made many valuable recommendations to Congress. G. W. Fiske in his *Challenge of the Country* mentions no less than forty institutions for the advantage of the farmer. At present about one-third of our people are farmers; and even though with the increased use of machinery, this proportion should decrease, yet those who remain will be of weightier importance because they must of necessity be more skillful and better trained.

Disadvantages

We learned at first that every occupation had its undesirable side, so we must expect to find that this is also true of farm life.

One point you have probably thought of already. That is the loneliness of country life, especially on the larger farms and stock ranches. Perhaps the farmer's wife and family, who are not directly concerned with the farm work, feel this more than the man himself. From the point of view of growth this is a great drawback; for we need much contact with other people for the sake of our mental development. And this isolation keeps one away from many means of culture and entertainment found in the cities. But you are already prepared to answer that this objection is being more and more overcome by the modern conveniences which the farmer is using. Many farmers now have their automobiles and telephones; roads are being built and improved, rural delivery and farm machinery are great helps. Forty-five per cent. of the students in the Agricultural College in the University of Illinois are from towns of over 5000 inhabitants, which looks as if the town boy must have a good deal of confidence in the improved comforts of farm life.

Although farming had always been considered more

healthful than city life, yet recent statistics show a better physical condition in the towns than in the country, and this too in the very diseases that fresh air would seem to overcome. What does this mean? In all probability, simply that the cities have found that they must combat illness by making conditions more sanitary, by making a conscious effort to get fresh air, sunshine and good food; while the country folk have not all learned to take advantage of what is within their reach, and often sleep with their windows closed and expose themselves unnecessarily to disease. So this second objection can also be overcome.

Next, there are several things that seem beyond his control upon which the farmer's success is dependent. Often the condition of the weather will mean a big loss in certain years. Too little rain, a frost too late in the spring, or too early in the fall, an untimely hail or wind storm, too much rain, and many other causes may mean a total or a large loss.

Then, too, his success depends upon the demand for his produce. A somewhat remote but interesting example of this is that of the esparto trade in North Africa. Esparto is a tough grass which for years was used to make a large part of the world's paper. About fifty years ago, we began in this country to make paper from wood pulp, and now trees furnish most of the material needed. This discovery of course ruined the esparto trade and left the Arabs who had raised it without any means of support. This is a remote case, but it is true that new discoveries are constantly affecting the market for certain commodities. Perishable foods may be produced beyond the demand. In some years tomatoes, apples, oranges, potatoes have spoiled in immense amounts because the neighboring market was overstocked. Then the price obtained

also depends upon the demand. For instance, potatoes may bring to the grower anything from 10 cents to $1.50 a bushel. So that with all these possibilities, it is small wonder that the farmer often worries over the uncertainties of his business.

However, we shall find that there are also remedies and compensations for these misfortunes. In the California orange groves, smudge pots are used to combat the frosts. Then, while there is a possibility of two or even three bad years in succession, it is almost never more than this and if judgment is used in planting those crops that are suitable to the climate, the chances are very favorable that the good years will outweigh the bad years. Indeed, there are farmers who have become wealthy in a very few years because of unusually good crops and good prices. As to the overstocking of the local markets, that is being balanced by the use of refrigerator cars, which makes possible the transportation of products to greater distances. Also the development in canning and drying processes is helping to overcome the waste.

Another drawback that often hinders boys from considering the farming business is the need of capital. The farm laborer's job is not one that the ambitious boy would care to consider as permanent. If he plans beyond this he must in some way get money to invest. We spoke before of the possibility of saving an amount. But to do this a boy must realize that he will go a long time without ready money to spend. Even after he is started he will have to invest a large share of his earnings in improvements and machinery. The boy who is going into permanent farming should either be ambitious and thrifty enough to save his own capital or, if his father is a farmer, should have prospects of stepping into his business before many

years, or should have some other means of getting capital.

These disadvantages are real and should be faced before deciding on a life work, but on the other hand, as we have seen, they are not insuperable.

Now as to the opportunity for women in this work. Many women have made good in specialized lines, such as poultry raising, market gardening, flower culture. One woman made a good living by raising violets; another devoted her attention to cultivating large and fine varieties of certain vegetables, such as tomatoes, potatoes, and peas; while still another went to California and had good success with an orange grove. While women seem best adapted to such specialized lines, they have also shown themselves capable of larger farming. One young woman just out of college recently took up a land claim in Montana. She built a little shack and showed great courage in starting out on her own responsibility. Most of the time she was able to hire one or two helpers, but she herself superintended the breaking of her land, and the planting and harvesting of her wheat. In the second year, she had a large harvest and is now making a good success. So it looks as if the women with courage could start out and do things in this line as well as in the many others which they are undertaking in these days.

To sum up: there is no occupation more important than farming. A young man with the natural inclination and energy needed for that sort of work, with the instincts of a manager, and with good courage, one who is willing to sacrifice a few comforts and to wait for the necessary education, will find agriculture an inspiring, healthful occupation. Here he will meet nature at first hand, and will help to solve perhaps the most vital problem of the nation, that of its food supply.

FORESTRY

An earth occupation closely allied to agriculture is forestry. There is this difference: that nature gave us a big start in the matter of forests and our part of the problem is only just beginning. If you should drive through some of our great western wooded country, you might be surprised to see the stumps of many immense trees and the thick but extremely slender second growth. This is one of the signs of the careless lumbering work that was done in early days. It was not until about the year 1900 that we began to realize that this wasteful process could not go on indefinitely. Since that time we have begun to see that we must learn from the experience of Europe, where, years ago, lumber became scarce and expensive, and every effort had to be made to preserve and increase it. There is a big problem before us now in finding the economical way of cutting the trees so as not to harm the young growth. The forests must be preserved from fire and blight and the depleted places must be reforested. Private owners, even though four fifths of the timber lands is in their hands, have not yet waked up to this necessity. There are exceptions to this in the cases of certain industries that are dependent upon a continued supply of wood from a particular district. For instance, paper mills which cannot be moved from place to place must see to it that their forests are preserved in order that their supply of wood pulp may not fail.

Here again is one of the many places in which we shall learn how the work of the government does underlie everything else. For it is the government that up to this time has done most of the work in technical forestry. As trees will grow in almost any kind of soil and temperature, so

long as they have a good supply of moisture, the government has planted forests in places that are unsuitable for agriculture. In California alone, these national forests cover 43,000 square miles. Ninety-five per cent. of the trained foresters at the present time have been in the employ of the government. Let us see just briefly what sort of men are wanted for this work.

Qualifications

1. They must be men who are willing to endure physical hardships, for a large proportion of their time must be spent literally in the woods and away from the comforts of home. For this reason the forester must have good health. As he advances in his profession, he will probably spend more time in his office, but he will always be obliged to live at a distance from the big cities.

2. The forester must also have a good intellect. While there may be times when physical work is necessary, that is not the technical man's main business. He will have problems to work out for the particular section for which he is responsible and there will be many questions which he will have to decide.

3. As in many other lines of work, the man who wants to rise must have executive ability. He will have foresters working under him whom he must be able to manage; and he must be able to look after all the details and see that they work together to his great end of preserving the forests and getting the greatest possible production from them.

4. In the present state of development, he must also be able to give to the public what he has learned. As a government employee, he may be called upon to make addresses or to write articles for the purpose of stirring

up public sentiment. For this purpose he should be able to express in clear and concise English what he has worked out in his private investigations.

Preparation

This occupation does not differ from all the others in demanding more and more training as time goes on. Less than twenty years ago, there was only one school of forestry in the country; now there are twenty-two which give a degree and forty others which include forestry in the course of study. It is desirable to have four years' technical training in college and of course this demands for entrance a four years' high school course. Some particularly ambitious foresters take post graduate work in Europe where somewhat different theories have been worked out.

Opportunities

As was said at first, the majority of these positions are with the government. These are entered through the civil service examinations. There is a practical examination given for the forest rangers. These are guards employed to protect the forest against fire and other damages. Their salaries run from $900 to $1500 a year.

There are next the technical examinations from which are filled the following positions. The government owns over 162,000,000 acres of forest land. Over this entire problem there are administrative officers who receive from $2000 to $3750 a year. The forest land is divided into districts over each of which is a supervisor who receives from $1400 to $2700 a year. Then there are the technically trained men or forest examiners who are paid from $1100 to $2200.

In the federal work there is likely to be room for

about twenty new men a year; in the state work, less has been done and there is a greater opportunity; while in private lands there are likely to be still more openings. The big lumber companies, paper companies, railways, and water companies, all own large forest districts. As trained foresters show their ability and what they can accomplish by their methods there will be more and more demand for them.

There is also a field on the government land in Indian reservations and in National Parks. As the consulting engineer has been found necessary, so there is likely to be a future for the expert as consulting forester. Work for the preservation and cultivation of forests will probably increase as the years go by. For although steel, cement, and other building materials are supplanting wood in certain lines, yet there are constantly new inventions for which it is used. Besides the uses that we ordinarily consider, there are also by-products; such as, turpentine, resin, tan-bark, and paper. Here again we see another way in which our forests have been wasted. The careless process by which turpentine and resin have been secured has left many trees with such a large opening by which the sap might escape that they have "bled to death" in a few years. Also this drying process has left them an easy prey to fire and wind. So here is another bit of work for those interested in the conservation of our forests.

There is connected with forestry another line of work that might appeal to the young man starting out in life. I refer to the work that is called "logging" in the lumber camps. This is strenuous physical work, and with it are joined many hardships; but it develops sturdy characteristics in those who can endure the strain. Men who are employed on farms in the busy seasons, often get work in these lumber camps in the winter. One of our citizens

of large achievement worked when a young man for several winters at logging because his health demanded a change from indoor confinement. The men who make this their habitual work are likely to become very independent and rather hard to control. This indicates another opening for the man who is peculiarly gifted in managing men.

MINING

Aside from the work of unskilled laborers, mining might properly be discussed under the head of engineering, for it is the mining engineer who tests the metal and decides whether the mine is worth working. From that time on he is needed to the end of the process. We take up the subject here because it is one of the earth occupations. Just as the farmer and the forester are cultivating our natural resources and sending their products to the factory, to the dealer and finally to the people, so the miner is delving into the earth and finding materials that are increasing the wealth of the nation. According to the census of 1910, there were 964,824 people in the United States engaged in this industry. You may be surprised to learn that 1094 of these were women. Valuable, however, as the products of the mine are, the farmer still holds a higher place than the miner in the worth of his output. We are told that the result of the mining industry in the whole world is worth only one-half of the production of the farms in the United States alone. Perhaps the ease with which the "forty-niners" obtained gold in California or the hordes that went to the Klondike about the beginning of this century panned it out, has made the chances to make money from mines seem more than they are. The trouble is that when the ore from the mine is gone there is no way of replenishing it, while the

farmer with his many resources can bring forth crops almost without limit.

And yet there is a tremendous value in our mines and in the industries that are dependent upon them. Without iron, which is found in deposits of iron ore, and steel, which is made from iron, there would be little left of the manufacturing business; for the manufacturers depend upon these for their very machinery with which they work, and many of their products are made from this material. Copper, lead, aluminum, silver, gold all have their very important places in our industrial world, while in this discussion we shall have to include stone quarries and lime pits. The earth gives us countless materials with which to work. You do not need to be told how important a product of our mines coal is. Here as in the case of the forests, it has taken us a long time to learn the lesson of conservation. For example when anthracite coal was first mined, only the best was used and about 70 per cent. was wasted. Now we have waked up to the extent of learning how to save 60 per cent.

Qualifications

One who is going into the business of mining in almost any capacity must be willing to do hard work in lonely places where it is impossible to keep his face and hands clean. Even the engineer who has had college training may be obliged to do hard manual work at certain seasons. Mines are necessarily situated in lonely places, far off in the mountains or perhaps in the cold regions like Alaska. If you cannot stand the loneliness or the dirt, do not undertake it. In a large mine there is division of labor; such as the laboratory work, work with machinery, and much underground work down in the mine. A few chemists may never be obliged to go into the mine

itself; but the successful engineer with courage and energy will want to experience every phase of the work. One young Harvard graduate came to the coal mines of Illinois and began literally at the bottom that he might learn the whole business thoroughly. He began 400 feet below the surface of the earth loading ore into the cars with his shovel, working in dangerous places, with foreigners who could not speak English for his companions. In this case the miners did what was called piece work and a good workman could get about $2.25 a day. The story of this man's experience gives a good idea of the qualities desirable in a miner.

Preparation

As we have implied, if he is going to do more than the hardest unskilled manual labor, the boy interested in mines must have a thorough training in a technical school. These schools are of the same grade as any college and require a four-year high school course for entrance. The course itself takes four years and in it there are several different phases of mining from which one can choose his specialty. Some of the subjects in which a mining engineer is supposed to specialize are: mechanics, physics, mineralogy, chemistry, metallurgy, mathematics, and geology. There is much and varied machinery connected with a mine. This includes steam shovels, hoists, and even railroads, besides all the machinery connected with the concentration plants. These are dependent upon a knowledge of physics and mechanics, and are responsible for the increased output in minerals. Take the following as an example of what machinery has done. In 1840 there were 125,000 tons of iron mined in the United States; in 1908, these had increased to 17,000,000. At the beginning of this industry, iron was produced by individuals

with small blast furnaces; for you must know that iron ore is frequently found so near the surface of the earth that there is little difficulty in obtaining it. But today the small furnace of the individual must give place to the big machinery and the result is that whereas at that time it took six days to produce one ton of pig iron, today four and a half tons are produced by one man in one day.

Opportunities and Advantages

There is excellent opportunity for the young mining engineer to get started and to rise in his work. Most boys who are brought up in a country remote from mines do not feel particularly drawn to them. One boy, however, who had lived in a prairie country but who when he was quite young had spent one summer with his parents in the mountains, made up his mind then and there that he would study mining. After he had had his high school course, he went to a school of mines, specialized in metallurgy, and loved the work from the beginning. Even in summer he did not care to take vacations but obtained work as a laborer in some mine. When he had finished his course he had no trouble in getting a position, and even though he has lived in out-of-the-way places amid rough people and great dangers, he has never regretted his choice.

A disadvantage is that this is a dangerous occupation. As in the case of factories, many devices have been invented to make mining safer, but it is impossible for all the dangers to be eliminated. There is danger from gas, from explosions, from caving in, and from fires. A woman whose two sons were miners and who herself lived in the mining town where they were working, said that she never saw one of them go down into the mine that she did not feel that he might not come up alive. But in spite

of this even she was fascinated with the life and did not want them to give it up. She said that it seemed like real living; that they were not being coddled and pampered but were facing real dangers and hardships in order to accomplish their work. The satisfaction is perhaps something like that which comes to the soldier or the explorer.

The mining engineer has an interesting task in working out the best methods of extracting the metal from the ore, constructing the machinery used at the mines, and making the work as safe and expeditious as possible. For example, by new processes of extracting aluminum, the price was reduced from $10.00 to $0.22 a pound. Gold and silver are produced at a much lower price than formerly. Many processes of combining metals and making new materials have been discovered. The field for the mining engineer is large and absorbing.

So much for the man who is working in a mine at a salary. It is quite another thing to start out prospecting or to think that you can make money from a mine that has not been proved profitable. Every one who has had experience advises keeping away from that sort of mining unless you happen to have capital that you can afford to lose. The many deserted mines in the mountains of our great western country are pathetic evidence of the people who have lost out on what they thought would bring them a fortune. The reason that some have become immensely rich in these undertakings is because they happened to be lucky in striking a rich vein of ore. But before they could be certain of this, it was necessary to risk large sums of money, and this, after all, reduces this sort of business more or less to a species of gambling. Many people who went to Alaska after gold was discovered there, made large fortunes, but many of these same people lost all that they had made.

FISHERIES

Another of the earth occupations, or as we might say perhaps a little more accurately, those concerned with natural products, is that of fisheries. Hugh M. Smith, the United States Commissioner of Fisheries, tells us that since the United States has included Alaska it has become the leading nation in this industry. Even though some of us do not live very near the actual field of operation, we ought to know something of this important occupation, and, in view of the predicted developments, those who are interested in agriculture may be brought very near to it. For on account of a probable depletion in the supply, caused by over-fishing the streams, and by obstructing and polluting many of the inland waters through other uses, there is a movement on foot to stock the ponds and streams on the island farms with fish supplied from the government hatcheries. It is predicted that in this way an acre of water might be more profitable to the farmer than an acre of land. So you see that the fishing industry is of great immediate interest to every one. In the *National Geographic Magazine* for June, 1916, Commissioner Smith tells in an interesting way of our remarkable resources in fishes. There are in the deep seas mammals as well as fish which in general belong to the same industry. For instance we lead the world in the production of seal. These are found in great numbers in Bering Sea, though by a terrible and useless waste, their number has been greatly decreased. Again we find the government at work, this time protecting the seal from the careless and selfish methods of individuals.

Then as we circle around the country we see what immense fishing grounds we have. In the Atlantic and the

Pacific, in the Gulf of Mexico, and in the fresh waters of the Great Lakes, not to mention the innumerable inland streams and ponds, are found almost endless varieties and supplies of fishes. Take for example just two varieties: first, the oyster. In one year there were sold 35,000,000 bushels of these. So great is the demand and so imminent the danger of the supply being exhausted, that the business of "planting" and of cultivating oysters has grown up.

Another great fish industry is that of the salmon. These are caught in certain seasons when the fish in great swarms migrate to the place of their birth. A large proportion of them are canned, so that for a short season that industry is very flourishing. Commissioner Smith tells us that in 1915, so many salmon were caught in Alaska that if they were put into two-hundred-pound barrels, and these were piled on end one on top of the other, they would reach a height of twelve hundred miles; and that if they were put into ordinary freight cars, it would take ten thousand cars which would stretch over a distance of one hundred miles.

While the actual fishing is a trying life and full of danger, and demands courage in the men who undertake it, there is also the phase of it that calls for good mental work and scientific training. The federal government and about twenty of the states have established hatcheries. Here many fish are hatched by means of incubators, and from these places they are shipped all over the country to supply ponds and streams. It takes special cars and expert train crews to manage the shipping part of the business. So far most of this sort of work has been done by the government, but in order to keep up the supply of fish for inland places, there is need of private enterprise; particularly in the culture of fish in streams and ponds. Perhaps some of you who go into the business of agricul-

ture may be interested in specializing in this line. In preparation, there is need of a thorough training in biology.

But this is not entirely a food industry. We have already spoken of the seal industry which is supplying us with furs; and you know of the pearl industry, and of the making of buttons from the shells of certain mussels. There are by-products here as in other places.

EXERCISES

1. Make a list of fifty articles in your home. Upon what "earth occupation" are you dependent for each one?

2. Write a short imaginary account of the experiences of a city boy who gets a job on a farm for the summer.

3. Discuss the following question either for or against: There are so many dangers of failure in agriculture that only a man with a large capital should aim to own a farm.

4. Tell the story of some woman of your acquaintance who has gone into agricultural work. If you do not know of one personally, try to get information from some friend or from a book or magazine.

5. Find out what is meant by the farm loan system. What is the Federal Farm Loan board?

6. What is a mortgaged farm? Why do so many men have their farms mortgaged? Is this good business? Can it be avoided?

7. Imagine a business man in a large city, and a farmer. In what ways does each depend upon the other?

8. How is the farmer dependent upon the government?

9. Take any one branch of agriculture, and discuss the opportunities for a man or woman without executive ability. Do the same in another branch for the one with executive ability.

10. Take any one branch of agriculture, and tell just how you would go to work to prepare for that occupation.

11. Find all that you can about the life and work of the lumberman. What is attractive or unattractive in it? Describe the kind of person that you think would make a leader of these men.

12. If a boy was interested in forestry as a profession, how would he go about it to get into that kind of work? What kind of preparation would he need and where would he get it?

13. Name as many products as you can of the fishing industry.

14. In the actual work of fishing either on the high seas or inland on streams and lakes, men seem to be either extremely fascinated, or to feel no interest or a real repugnance. Give reasons to explain this.

15. Describe some part of the country in which a boy who intended to go into the occupation of mining would be likely to live.

16. Send for the catalogue of some Mining School, like that, for instance, at Golden, Colorado. What preparation is necessary for entrance? What sort of studies would be pursued in a course there?

SUGGESTIONS FOR FURTHER READING

FISKE, G. W. *The Challenge of the Country.*

BURKETT, STEVENS, and HILL. *Agriculture for Beginners.* Ginn & Co.

HUNT, T. F. *The Young Farmer.* Orange Judd Co.

WILLIAMS, ARCHIBALD. *The Romance of Modern Mining.* Seeley & Co., 1907.

BAILEY, L. H. *The Country-Life Movement in the United States.* The Macmillan Co.

BAILEY, L. H. *The Outlook to Nature.*

GRAVES, HENRY S. *The Profession of Forestry.* United States Department of Agriculture. Forest Service — Circular 207.

SMITH, HUGH M., United States Commissioner of Fisheries. Article in *National Geographic Magazine.* June, 1916.

HUSBAND, JOSEPH. *A Year in a Coal Mine.*

SMITH, J. RUSSELL. *Commerce and Industry.* Henry Holt & Co., 1916.

CHAPTER IV

TRANSFERRING OCCUPATIONS

The third group we have called "transferring occupations," because, as the name implies, they "carry across" products, people, and money from one occupation to another. As we have seen in our diagram, transportation and banking form connecting links between the other big divisions of occupations. It is by means of banking that the great undertakings are backed financially; and by means of transportation, that the products of the farm, the forest, and the mine reach either the merchant or the great factories; and again that the finished product of the factory finds its way to the dealer and the consumer.

Transportation may be considered under three heads: (1) railroading, (2) water transportation, (3) street railways. By far the most important of these, and in fact one of the greatest single industries in the United States, is railroading. It employs almost two-thirds of the people employed in all transportation in our country, the number of whom according to the 1910 census was 2,637,671.

The more we learn about this remarkable organization, the complicated systems in adjusting the business side of its work, and the expert skill demanded in various phases of its construction and its operation, the more we admire the mind and character of the men who make this wonderful system possible. The history of railroads reads like a veritable romance. Starting in our country with the

old canals and turnpikes, the latter being the road-bed for the picturesque stage-coach of early days, we have come to such a degree of luxury that we can travel from one ocean to the other with all the comforts of our modern home life; while from the humblest citizen to the most important manufacturer, we may ship our goods, small or bulky, cheap or expensive, from any place to any other place, with pretty well assured safety and expedition.

In connection with the history of railroads, it is interesting to note that they owe their beginning to the earth occupations that we have just been considering; for the first suggestion to use steam for transportation came about three centuries ago in England, when it was suggested that agricultural products be carried across the country in this way. The first railroad in the United States was built in 1827 in order to carry granite from the quarries for the building of Bunker Hill Monument. This carrying of material for the industries and for business is still the main purpose of transportation. We may well ask: "Do the earth occupations and manufacturing depend upon transportation; or does transportation depend upon these productive occupations; or again do they both depend upon commerce, or does commerce depend upon both of them?" To all these questions, we may answer, yes; for, on the one hand, the producers must have some means of transportation, and on the other, the railroads depend for their profit upon the freight business, while we can easily see how commerce and both of these occupations are interdependent. Again the government is back of this group, and sometimes has to step in to adjust matters between the great army of workmen and their leaders. Some of the states have railroad commissions and others are likely to have them soon. During the war, the government assumed complete control of the railroads, and

there is a question as to whether this system will become permanent.

We are not surprised, therefore, to learn that in this immense machinery, there is a place for every conceivable sort of ability, and that many kinds of preparation are demanded. Let us take a bird's-eye view of its various departments and try to see of what sort of men they are made up.

The business of railroading may be divided into three great divisions:

First. The operating department. This department has charge of the tracks and of the moving of freight and passenger trains. In order to make this department effective, first of all roads must be built, rebuilt, and kept in repair. In charge of this part of the work is an Engineer-Maintenance-of-Way. Under him in each division is a Chief Engineer; and working under him are civil engineers, surveyors, and a host of unskilled laborers over sections of whom are foremen and supervisors.

So much for keeping the road in order. Next we must have the men who actually operate in moving the trains. There is in each division a train master, whose duty it is to assign the men to their work and to see that the work is well done. The beginners in this department are boys who start working in the yards, running errands and calling crews. Later they are made hostlers with somewhat more responsible duties, helping to get the engines ready to start out on their trips. Finally, the capable boy becomes the fireman on a freight train, then is transferred to a passenger train; is next appointed to run a freight train as engineman and at last gets the coveted position of engineman of a passenger train. Or on the other hand, the hostler might have started in as brakeman on a freight train, from this he would become brakeman on

a passenger train, then conductor on a freight train, and finally conductor on a passenger train.

Besides keeping the track in order and actually moving the trains, it takes another group of men to maneuver the operating department. These are the telegraph and signal men. Here there is a divisional operator in charge, and under him the train-dispatcher with station operators and tower-men working under him.

Besides these there are a great many men working in the freight yards in charge of the yard master, who in himself is a general.

Second. The shops. It is here that the thousands of cars are constructed, repaired, and kept in good condition. A number of locomotives are also built here, though most of these are bought from a manufacturer. It is said that half of those used in the United States are made in Pennsylvania, while a fourth of them are made in New York state. But the shops owned and operated by the railroad companies are used for the building and repairing of freight and passenger cars. These are really great machine shops and the ability required is of the mechanical sort, such as is required in the manufacturing business. So although we shall not consider this division in detail here, we might mention what men are employed in the work. There will be a Superintendent of Motive Power to whom two sets of men are responsible. First, the train-men, that is, the enginemen and firemen, are working under this department on the side of equipment. This means the seeing that everything is in perfect working order; for it is to the shops that the engine and train must be sent for repairs. We have already seen that on the side of running the trains, these men are responsible to the train-master. The second set of men responsible to the Superintendent of Motive Power are: the Master Mechanic,

who is the head of the shop itself, and under him skilled mechanics and laborers, with their foremen. Here there is also a large clerical force.

Third. The general offices. It is here that the tremendous details of freight and passenger business and the accounting are handled. We have mentioned the force that builds, equips, and maintains the road, and those that keep the trains in motion; now comes the more purely business end of it all. Here there are many sub-departments; there are the auditors who must keep account of all the earnings of the company, i.e., from passenger tickets, freight charges, and other sources of income. There is the purchasing agent to whom all requests for supplies and equipment must go. There is the statistician who analyzes the revenue and costs so that the former may be kept ahead of the latter. To be sure, most of the railroads are making money, and yet it might surprise you to learn something about their tremendous expenses. Just to take two or three comparatively small items; in one year, in a certain road, the cost of lead pencils was $4000 and the bill for printing tickets was $40,000, that for printing folders was $50,000. There are also men who figure out the freight and passenger rates, those in the legal department, the claim department, and many others.

On the side of sales and advertising, we find men that correspond to these departments in other lines of business. What sort of men these should be, we shall find when we come to the study of commerce. What success they have made is suggested by the remark of an Englishman who has made a study of our railway systems: "What the American railroad manager does not know about advertising methods is scarcely worth knowing." To carry on this end of the business, we have the General Passenger Agent, and under him the station-masters, station-agents,

PRESIDENT

GENERAL MANAGER

Operating Department						*Shops*		
Engineer Maintenance of Way		Train Master			Divisional Operator	Superintendent of Motive Power		
Chief Engineer of Each Division		Engine-men (Passenger)	Conductors (Passenger)	Yard-master	Train Dispatchers	Master Mechanic	Road Foreman of Engines	Clerical Force
Civil Engineers	Supervisors	Engine-men (Freight)	Conductors (Freight)	Towermen	Station Operators	Skilled Mechanics	Engine-men	
Surveyors	Foremen	Firemen (Passenger)	Brakemen (Passenger)	Gate-keepers	Tower-men	Foremen	Firemen	
	Unskilled laborers	Firemen (Freight)	Brakemen (Freight)	Track-men		Laborers		
				Hostlers				
				Errand boys				

PRESIDENT

GENERAL MANAGER *

Business Offices

General Passenger Agent		General Freight Agent	Auditor	Statistician	Purchasing Agent	Claims Agent
District Passenger Agent		Divisional Freight Agent	Clerks	Clerks	Clerks	Clerks
Station Master	City Ticket Agent	Baggage Master				
Station Agent	Clerks	Baggage Agent				
Ticket Sellers / Ticket Examiners		Freight Clerks				

* Assisting the president and general manager there are two plans used: i. e., vice-presidents over the departments or superintendents with their assistants over the divisions.

agents in the city ticket offices. On the freight side, there is the general freight agent, with the baggage master, baggage agents, and freight clerks.

This brief summary does not by any means include all the people who are working for the railroads, but in outline as it is, it will give you some idea of the empire that a great railway system really is. Over all these people: the engineer-maintenance-of-way, the superintendent of motive power, the train-master, the division operator, the purchasing agent, is the general manager; and finally over all is the president. Later we shall have more to say about these different men. We should add that in different roads the organization varies somewhat, but that in the main the outline will hold.[1]

Qualifications

In railroading, the variety of work is so great that in some department or other, there is room for almost every sort of ability. As you see, in both the maintenance of way and the shops department, there are employed bands of unskilled laborers, who must have the same sort of ability in this as in other occupations. For the departments which require more skill, let us look at some of the qualities that have been enumerated by an authority in railroads.

First, there must be a rather high grade of mental capacity. The railroad man must be able to understand the complicated signal code, the mechanism of his engine, or, as a conductor, he must be able to handle the tickets and keep the necessary accounts. It takes a man of intelligence to make a good railroader.

Second, he must have a good physique. As a brakeman or a fireman he will be obliged to do hard physical work.

[1] See diagrams on pages 64 and 65.

As an engineman, he must face exposure to all sorts of weather.

Third, he must have strength of character so that he will not flinch under a responsibility which entails the safety and lives of many people.

Fourth, he must be punctual; lack of this means not only inconvenience but positive danger to the patrons of the road.

Fifth, he must be observant; if he does not see a signal or a fault in his machinery the result may be disastrous.

Sixth, he must be attentive; neglect or forgetfulness may mean the loss of human life.

Seventh, he must be temperate. In one division of a certain railway there were innumerable accidents. It was found that the train men were doing an excessive amount of drinking and it was necessary to appoint a superintendent who was a particularly good disciplinarian to overcome this. However, now, employers of all sorts are waking up to the fact that the grade of efficiency is greatly lowered by drink, and it is largely due to this fact that so many states are passing laws prohibiting the sale of liquors. The recent bill passed by Congress shows what our government thinks on this point.

These requirements refer particularly to the operating department and you can see that they are fundamental qualities for all of these employees. Beyond these points, what are some of the qualities that might be helpful for one who would gain the great advantage of railroading; namely, the opportunity to rise; for there is probably no line of business in which there have been so many instances of this.

In all departments, the chief requisite for those who would hold superior positions, is executive ability. In the operating department, one must be able to handle men, and

to look after the practical details that go with the operation of trains. In the shops, there are many men to manage, and in the offices, executive ability is required in handling office details.

Now since executive ability is so important not only in all departments of railroading but for those at the head of every occupation, it might be helpful to discuss what we mean by it. An executive position is one which assumes the responsibility of seeing that things are done. It may mean the handling of men, that is, the ability to see that many other people do their work and get satisfactory results. Your natural ability in this line may be observed in school days by seeing how much of a leader you are. In the literary societies and the athletic teams, can you persuade the other boys to do what you believe to be the best thing? This power to handle men is largely an inborn characteristic. A young man, whose father is a wealthy and successful engineer, went west to help him in superintending the building of a railroad. Because of his quiet strength and tact, he had no difficulty in getting all the work he thought necessary out of the gangs of workmen. In fact, when he himself was transferred to a section of the country a thousand miles away, several hundred foreigners refused to go on with the work unless they could be transferred with him. From this experience the young man could have no doubt that he was a born leader and that his work must include the handling of men.

Or executive ability may mean looking after details of work. It is quite a different quality from that required to do a certain definite piece of work that has been assigned to you. In an office or shop, it means responsibility for every detail, so that the big result which is made up of numberless parts shall be complete. Men usually have

to work up to executive positions, and so their powers can be tried out as they go along.

Second, the power of absolute concentration is an asset. A young man who worked in the general offices of a railroad forged ahead of older, more experienced men, chiefly because of a wonderful power of concentration. When he sat down to work at his desk, he knew absolutely nothing of what was going on around him, and the result was that he accomplished much more than the other men. You have an excellent opportunity to cultivate the power of concentration when you are studying your lessons. Sit down with your books and see if you can be dead to everything around you until you have your task completed.

Perhaps as important as anything else is the willingness to do unpleasant work; for most of those who have risen in railroading have begun with hard, disagreeable, often dirty work.

To sum up the requirements once more: Work in the operating department demands practical ability, courage, and the power to handle men; in the shops, mechanical skill, and in the offices, clerical ability, i.e., neatness, accuracy, and power of concentration. In all departments if one would attain a position of leadership there must be executive ability besides a willingness to do unpleasant work. Besides all this, railroading is such an inclusive business that it also uses all sorts of engineering, legal, other professional, and commercial ability; but these will be discussed in connection with other occupations.

Preparation

The man who has set his goal in the higher ranks of railroading must make up his mind to a stiff course of preparation. He must learn the details sufficiently to

pass judgment on the maintenance of way and the equipment; he should know something of civil, mechanical, and electrical engineering, and of building. Then when he has had a thorough training in the intricacies of railroad management and schedules, he is in line for a position of importance. Is it surprising that railroading is regarded as a profession? This preparation, needless to say, implies a college course. And along with this training, he should have experience in handling men; and after that he should be willing to begin low in the ranks. In the state of Illinois about 3 per cent. of the entire population are employed in some sort of railroad work. Realizing this, in 1916, the University of Illinois established a School of Railway Engineering and Administration. They have a splendid equipment for this training, one building especially constructed for the testing of locomotives, test cars, besides other apparatus. Here there is a thorough training in mathematics and science and in railway, civil, mechanical, and electrical engineering. On the more purely business side, courses are given, one for those interested in the traffic and accounting departments, and one for those interested in transportation. These courses bring the degree of B. S. and are equivalent to any college course, requiring for entrance four years of preliminary work in a good high school.

Or instead of this, the prospective railroader may enter one of the railway schools. The *Scientific American* has published an article describing these. The following is taken directly or indirectly from this article: A fellow may enter as "regular" or "special"— the former need have only a public school education, but the latter must be a college graduate and can qualify for the higher positions. When he starts his training, he is put into repair work, ent from one shop to another,— planing, machine

work, black-smithing, boiler shop. In all of this, his work is very strenuous, ten hours a day amid all sorts of noise and dirt. Then he goes to the car-shop and learns about building all kinds of cars from a hand-car to a Pullman, and next he must spend three months as fireman on the road. Then comes the final year which is spent in the business departments, and the testing room where the railroad chemist tests the steel alloy used in various ways in the construction of a locomotive; and last comes the drawing room. After these three years, he receives a diploma, and is ready to work into the best things in railroading.

The Pennsylvania, Santa Fé, New York Central, and a half dozen others have schools of this sort. So an excellent opportunity is offered for a young fellow who has mechanical ability and the courage and perseverance to stick to the work.

Opportunities

In general, in the railroad business there are excellent opportunities if one has the ability to do the work. The salaries paid the higher officials are excellent, and promotion from road to road is often given to men of exceptional ability. Wages or salaries range all the way from $500 to $50,000 a year.

Beginning then with the most unskilled, the laborers in the construction gang get from $10 to $12 a week, while the foreman gets from $15 to $25. If one starts operating as a freight brakeman, he may be paid two cents a mile. In from five to fifteen years, he may be appointed as freight conductor with a wage of three cents a mile. Passenger conductors get $125 a month with extra pay for Sundays. Passenger brakemen may be promoted to collectors at $70 a month.

In the shops, one may start in as helper to a machinist and may work up according to his ability. The superintendent of the Chicago & Northwestern shops gets $12,000 a year because of his ability to handle men.

The pay of the men in the offices varies greatly. Some young men who have gained the reputation for superior excellence have been called by other roads, and have been offered much larger salaries than they would have received, had they remained.

When we think of railroading it is usually of the operating and maintaining departments; probably because these departments differ more from other businesses. In these departments are 96 per cent. of all the railway employees, and it is from these departments that most of the high officials have risen. All along the line above the grade where uneducated, unskilled laborers are employed, there are numberless fascinating phases of the work, work that takes intellect, skill, and executive ability, and such work always brings satisfaction in its efficient accomplishment. Take the one item of the building of bridges, which has been a big problem in the construction of railways. In the early days these were built of wood, later of stone, then iron was used, and just when that was found to be inadequate, Bessemer in England found the new process for making steel. Do you see here again how all the occupations are interwoven? It is of course the engineer who builds the bridges, and it took an inventor with a knowledge of chemistry to find the material. Again, when the railroads were first built it seemed necessary to complete their construction as quickly as possible, so that in their operation much power and money were wasted in pulling the trains over grades and around obstacles. This is the cause of the constant work in reconstruction. Grades are lowered, tunnels are built, and roads are

straightened. This, in time, saves expense and it keeps an army of engineers and laborers busy.

Another big matter is the building of terminals. This is the work of master engineers and architects. Just consider for a moment that in one year in Boston there passed through one terminal 31,831,390 passengers, and 2,500,000 trunks. Daily there were 800 trains. Besides arranging for these, there must be storage and cleaning rooms for cars and engines. The ticket offices, baggage rooms, check rooms, gates and doors to trains and street, must be planned for convenience of approach and avoidance of confusion.

Next consider the freight yards, especially those in the big cities. Besides the main yards, the great manufacturing concerns have their private sidings to which the railroads must send their trains. There are also separate yards for coal and other commodities. In one of these main yards there are two hundred miles of tracks and two thousand switches. Think of the generalship that it takes to manage this! The night yard master can be no ordinary man; for while the freight is being sent in for shipment all day, it is usually at night that the great work of sorting, arranging and inspecting is done. One yard master said that during a space of twenty-four hours he had seven thousand cars to dispose of.

Again, consider the train dispatcher. While the office force has accomplished the difficult task of making the train schedule, it is impossible in such an immense system for everything to go without a hitch. If there is the slightest change the train dispatcher must get word to every engineman and conductor in his division so they will know just what trains they are expected to meet or pass and just where and when. This is done with the aid of the station operator.

Over all this organization is the president. Among the greatest railway presidents have been Hill, Harriman, Brown, and McCrea. It is said that nine out of ten of all the presidents have come out of the operating department. And that is not surprising when we consider that that kind of work is most likely to develop executives. While many railway presidents in the past have risen from the lowest ranks, the organization of industry has become such that in the future this is not likely to be the case. One does not, however, need to be the president in order to have a responsible, satisfactory position.

Below the president is the general manager. While these responsible positions are the goal of many young men not only from the point of view of salary, but from that of the satisfaction that comes from handling big situations, they carry with them an immense amount of care and work. One general manager said that it was a common thing for him to work eighteen hours a day. He has a constant line of requests asking for extra trains, new stations, elevated crossings, etc., and he must have the fullest information and the clearest judgment, in order to decide what is to be done in justice both to the road and to the public.

Then there is the superintendent, who also must be a man of no small measure. He must attend to numerous complaints and must see that the train schedule works as accurately as possible. A first class superintendent is in demand. One branch of a road in the Middle West was in a very much run down condition. A search was made all over the country for superintendents, but the right one was not found. Finally a man from the East applied and asked for a salary of $50,000. The directors were staggered, but the man knew what his own

services were worth and would come for no less; so because of the emergency they took him and in one year he had saved the road more than the amount of the salary that they had hesitated to pay.

There are hundreds of cases of railroad men rising from the ranks. This, however, does not mean that every one who becomes a station agent or conductor will finally become president. Sometimes when the man is not big enough for his job the march is in the opposite direction; and so one man who had been a superintendent became a station agent in a small town. Then even though a man has the qualities for rising he may not go to the top; for it is evident that there could not be room there for all. Always remember that a top implies a base which must needs be much broader than the top. A man may go to the end of his days as superintendent and never become manager simply because there are no vacancies ahead. But the fact still remains that railroading offers a splendid chance for advance to the really capable man; and that even many degrees below the top there are very desirable positions.

It is hard to say which occupation does the most for the welfare of the country, but in so far as any work contributes toward this, it may bring satisfaction to all having a part in it. Agriculture, we have seen, is not only important, but is absolutely essential, and yet from the earliest colonial days to the present time, transportation of some sort has been a most powerful factor in the development of every phase of our life.

Let me quote to you a few sentences from a talk given by the editor of a railway magazine. "I know of no business which better offers to merit the chance both to accumulate a competency and to acquire and use influence for the public weal than does the railway industry in

the United States. . . . Men of really big minds and great souls do not work for money alone. . . . No one has a better chance to render valuable service to the public than the railway officer. On the one hand he must be an executive of the highest order. No meaner talent can operate efficiently a great modern railway. On the other hand, he must be a statesman. He must devise and carry out policies that will inure to the good of the public; and he must also convince the public that he is doing so; and to devise, carry out, and, in the forum of public discussion, vindicate beneficial public policies is the very definition of statesmanship.

"Changing conditions will ever present new and additional requirements that must be met. So, no matter how well the railway officers of today do their duty, there will be plenty of opportunity for work, for advancement, and for public service for those who come after them."

Disadvantages

Immediately, I am sure, you are thinking of one great disadvantage. Railroading is certainly a dangerous occupation. The United States Statistical Abstract gives for the year 1915, 2152 employees of the railways killed and 138,092 injured. Three things might be said to offset this fact. First, according to their own testimony, many of the accidents are due to the carelessness of the men themselves, a fact which, of course, suggests a remedy. Second, a good life insurance system has been worked out for railway employees. Third, the same thing may be said here that is true of the miner and the soldier, namely, that when a thing is worth the doing, it may be worth incurring a good deal of danger. All this should be taken into consideration before one decides to take up railroading as a vocation.

Another disadvantage is that for one who starts at the bottom without a special education, there is not quite the chance to rise to the top that there used to be. This is on account of the regulations made and enforced by the Railway Brotherhoods, by which promotion is based upon seniority rather than "pull," or even merit. However this does not apply to such employees as clerks, stenographers, station agents, telephone operators. It is, indeed, from this side of the operating department that most of the high officials have come. Following are some of the positions from which the present railway presidents have risen; clerk, telegraph operator, section laborer, water boy on track work, stenographer. So although the rise along one line may not be so rapid as formerly, there is still excellent opportunity for the efficient man.

What about the chances for women in railroading? The United States census report of 1910 gives 106,596 women among the 2,637,671 people engaged in the work of transportation. I need not mention the positions which it is certain that women do not fill; but many are employed in the offices and in various clerical positions. They are also employed as telegraph and telephone operators. But in the work that belongs distinctively to railroads, they seldom find a place. One notable exception is that women have made good as station agents in small places; and another, that in war time, there has been found scarcely a position that women cannot fill unless it be that of engineman or fireman. However, on the whole, there are many kinds of business that will appeal to girls more than railroading.

But transportation refers not only to steam railways, but to navigation, street railways, trucking, the taxi business, etc. The former two are organized and run in very much the same way as the steam railways. The traffic

on our navigable rivers, the Great Lakes, and the coastwise routes, makes a bigger business than those of us who live inland realize. Many of us have an opportunity to see something of what is done by the electric street railways, the elevated, and possibly the subways. But generally speaking, in both of these, the opportunities and lines of advance are very like those in the railroad business.

We have spoken of the fact that many high officials of the railways have risen from the ranks, and of the qualities that help towards success. Here are two examples of men who have achieved this success. The following account of W. C. Brown, the former president of the New York Central Railway, is quoted from an article in *Leslie's Weekly*.

"Many a king rules over less of an empire than that over which Mr. Brown holds sway. The New York Central system has a peaceful standing army of 150,000 employees. Its expenditures were no less than $150,000,000 annually. There are few offices of state that compare in dignity and in power with the headship of such a system.

"'The little man unafraid,' he has been called. It is astonishing, when you recall his small stature and youthful, even jaunty, appearance, how he can handle men so well.

"Mr. Brown began his railway career at the age of sixteen, when he entered the service of the St. Paul Railroad in the capacity of a section-hand and wooder for the old-style engines. In his leisure moments, which were few indeed in those days, he studied telegraphy. He set for himself no definite goal, but in nine months had qualified as a telegraph operator, and in two years became a train dispatcher on the Illinois Central, and later held the same

position for the Chicago, Burlington & Quincy. At one time when a great snow storm had blocked the trains on his road, he had finished his duty as train dispatcher, and might have gone home, but instead, because he discovered that three or four hundred cars of stock were in the yards and that the superintendent was at his wits' end as to how to get them to a safe place, Mr. Brown helped all night and the cattle were saved. The president of the road was so impressed that a train dispatcher had actually volunteered to work outside of his particular line for a full night, that he kept him in mind and before many years had passed, W. C. Brown was made General Manager of the Iowa lines of the Chicago, Burlington & Quincy.

"As an authority on railroading, William C. Brown stands foremost among the railway men of the United States. His knowledge of the industry is intimate — he has served in almost every capacity under the system, and has learned by experience the intricate workings of each separate department; and besides this knowledge he has a wonderful organizing and executive ability."

The other example is that of John C. Stubbs, who at sixty-five years of age retired as director in charge of all traffic of the Union and Southern Pacific railroads. He began his work by checking freight for the government at Nashville, Tenn. At the age of twenty-three, he went to Sacramento as chief clerk of the general freight agent of the Central Pacific Railroad. At twenty-four, he was assistant general freight agent; at twenty-six, general freight agent; at thirty-four, freight traffic manager; and later, general traffic manager. At forty-one, he was vice-president of the railroad and at forty-three, director of traffic for the Union Pacific and Southern Pacific lines, and vice-president of the Union Pacific and Oregon Short Line. He received the largest salary ever

paid a traffic director. It is said that the secret of his success was his power of doing a tremendous amount of work.

BANKING

Transportation has to do with the carrying of goods and people; banking with the transferring of money, or of credit which answers all the purposes of money. In our earliest colonial days, money was not so much needed, because the goods themselves were exchanged. But business soon developed so that both money and banks were essential, and the importance of these banks has grown until now they are back of almost all commercial undertakings. For instance, imagine a man in business who has given a good deal of credit to his customers. He may know that a certain amount of money will come in to him in the future but he needs that money now in his business. He goes to the bank which knows his standing in the business world and gets "credit" and so is able to carry on his projects before his actual money comes in. Or another man may have given him a note which he knows is good but which he would like to collect before it is due. He takes this note to the bank, and if the bankers can prove that it is good, he is paid whatever it is worth at that time.

In order to carry on this system of credit the bank must have its own capital, and besides this it adds to its funds by taking charge of money for other people with the privilege of lending it at interest. By means of checks, notes, and orders, much credit is exchanged without actual money, but the bank must be ready to pay money for these whenever asked. Here we see how banking is really a connecting link between the occupations; it stands back of the farmer, the merchant, the manufacturer.

There are many different kinds of banks, such as national banks, state banks, commercial banks and trust companies; but all perform essentially the same service.

Bank work is for the majority of the clerks a good deal like that of a bookkeeper. The tellers, however, are engaged largely in the handling of money. The officers have executive positions with more responsibility.

Qualifications

1. One of the first essentials put by all bankers is character. One who applies for a position must first of all be upright and without bad habits. Although the expert examination of books and government inspection has developed to such an extent that it is getting more and more difficult for a bank clerk to be dishonest, yet the banker will run no risks by taking any one of uncertain character. The fact that bank clerks are put under bonds shows that there is a strong temptation to dishonesty. Some banks will not take a man unless they feel sure that he can support those dependent upon him — for instance, they will take no married men in the positions below a certain salary — so that they may not be tempted to get money dishonestly.

2. He must be intelligent and skillful in handling figures. The new adding machines and interest tables have almost eliminated the long adding and multiplying processes that bank clerks had to go through. However, there is still the complicated system of bank bookkeeping which demands a good clear head.

3. He must have a special taste for this sort of business. The bank is primarily a place where things are done in a routine way and there is not much room for originality. It appeals to a boy of just the opposite type

from the one who goes into manufacturing or engineering. It requires intelligence but not inventiveness.

Preparation

Many boys start when young as messenger boys and learn the business in the bank, with, at first, very small pay. But a certain amount of schooling is now considered a great advantage. The schools of commerce, especially those connected with the universities, have courses in banking and young men with this training may begin with a better position and have a much surer foundation. Bankers and business men all around are learning to have more and more confidence in these schools.

Opportunities

Here as elsewhere there are employees who do not require special training and therefore do not have the chance to rise. These are janitors and attendants of various kinds. But we shall consider the places that are in the line of advancement. There is usually a rather regular but slow promotion, although every bank does not have the same system. In large cities, boys ordinarily start in as messengers at $25 or $30 a month. After this, they may become collectors, clerks, tellers, bookkeepers, and cashiers, with their assistants. The difference between clerks and tellers may be defined somewhat by their original meaning; a clerk being a writer and a teller a counter. The clerk's work has to do with the keeping of accounts while the teller has more to do with the actual handling of money. The order of advancement is somewhat as follows: collector — assistant to clerk — assistant to teller — assistant to bookkeeper — collection, coupon, or corresponding clerk — note, receiving, or paying teller — bookkeeper — assistant cashier — cashier. Bookkeepers may receive from

$1200 to $1500 a year. The advancement is rather slow but the work is secure; while in most banks there is an excellent opportunity to work to a competence. The officers usually command very good salaries.

A great satisfaction that comes from banking is that of feeling that one's work is done in an accurate, clean-cut, business-like way. Then, too, many young men are willing to work in a bank at a smaller salary than elsewhere, because of the clean and pleasant surroundings and because of a certain respectability that seems to go with it. The hours, also, are short and the work usually not unduly hard.

One young man thought that he had the qualifications of an architect and set out to prepare for that profession. He did have the required talent and liked the work, but one day he came to his father and said, "I can't do it. I see plainly that before I can make my reputation, I shall have years of soliciting work, and I shall be obliged to spend much time on cheap barns, sheds, and other inartistic work." This he felt that he could not do as he had not the confidence necessary to force his way. So he tried one or two other things and finally obtained work in a bank. Here he began near the bottom but he soon found that he had discovered the work in which he could be happy. He made himself so useful that the banker took pains to hunt his father up and tell him how pleased he was. With the boy's temperament, in spite of his love for architecture, he never could have stood that work; but he was happy in the bank where he had plenty of work to do but did not have to go outside to solicit it.

Again the banker may have the satisfaction of feeling that he is doing a work that is necessary to almost every business. A great many undertakings would never have started had they not had the banks back of them. Amos

K. Fiske, in *The Modern Bank,* says, "The bank is the most important instrumentality in the modern system of industry and trade. Without it this system could never have developed, and without it, could not now be maintained."

Disadvantages

As to the disadvantages, the work is entirely indoors and sedentary in its character, so that a boy of active temperament or one whose health is not good, should not undertake it. Also, bank bookkeeping is said to be peculiarly hard on the eyes, and very often boys find after several years that their eyes will not stand the strain.

Women in Banking

Many women are attracted to banking and we find them in very good positions. They may start in as stenographers or secretaries and may become clerks and even tellers. One young woman worked in her father's bank for a number of years and finally became cashier. At her father's death, she became a large shareholder and was elected as president. This is of course an extreme case, but many women hold positions in banks with good salaries and agreeable surroundings.

EXERCISES

1. Mention the companies in your part of the country that represent the business of transportation. Make a list of the other occupations that are in any way dependent upon these.

2. What new means of transportation is likely to be very important in the future? What qualifications do you think a man should have for this sort of work? Is it suitable for a woman? Why?

3. Have you ever seen men working in the Maintenance-of-Way Department? Write a theme on the conditions and the importance of their work.

4. Can you think of any incidents that have demanded the same qualities in railroad employees that are required in the soldier?

5. Make a list of the qualities required by a telegraph operator. Could a woman do this work?

6. Why might the yard master be called a "general"? Write an imaginary story of the work of a night yard master.

7. Make a list of all the positions in railroading that you think a woman might fill.

8. A railroad passenger brakeman said he had twice lost his chance of promotion, because he had failed to give the proper signal with his lantern. He remarked, moreover, that he did not wish to become a conductor because he dreaded the responsibility. Write a character sketch of this young man.

9. Examine the list of qualifications given in this chapter as requisite for men in the railroad business. For each one think of an illustration to show its value.

10. In Kipling's poem, "The 'Eathen," occurs this line,

"But the backbone of the Army is the non-commissioned man!"

Do you believe that this same principle applies to the railroad business? Defend your opinion.

11. If a boy has executive ability or the power of leadership, what line of procedure would you advise in order that he might attain in railroading the best position of which he is capable?

12. In what ways does a bank make its profits? Does it run any risk of losing money? How does the government stand back of the banks?

13. Make a diagram similar to the one showing the organization of railroads, doing the same thing for the organization of the banking business.

SUGGESTIONS FOR FURTHER READING

FLEMING, RALPH D. *Railroad and Street Transportation.* Cleveland foundation. 1916.

HUNGERFORD. *The Modern Railroad.*

MCPHERSON, L. C. *The Working of the Railroads.* Henry Holt & Co., 1907.

WILLLIAMS, ARCHIBALD. *The Romance of Modern Locomotion.* J. B. Lippincott Co., 1904.

WILLSON, BECKLES. *The Story of Rapid Transit.* D. Appleton & Co., 1903.

FISKE, AMOS K. *The Modern Bank.* D. Appleton & Co., 1904.

EATON, J. S. *Education for Efficiency in Railroad Service.* United States Department of Education, Washington, D. C. Bulletin No. 420.

JOHNSON, EMORY R. *American Railway Transportation.* D. Appleton & Co., 1903

FAGAN, J. O *The Confessions of a Railroad Signalman.* Houghton, Mifflin Co., 1908.

CHAPTER V

MANUFACTURING AND THE BUILDING TRADES

After our earth occupations have done their work in extracting the materials of our natural resources, and after transportation has carried these materials to the big plants, and our banking system has demonstrated its ability to stand back of business enterprises, then comes the work of the great manufacturing and building concerns which take this raw material and transform it for us into a usable form. This occupation has far more branches than any that we have yet studied. Any one of the commodities produced in the earth occupations represents the possibility of many industries. Take the wood from our forests, and we have lumber mills, paper mills, furniture factories, building trades, wagon works; take the stock farms, and we have packing houses, with their immense manufacture of by-products besides the leather business, the great shoe and glove industry and many others; take the mines, and we have gigantic iron works and steel mills with all that come from them, the making of machines of an infinite variety, besides steel rails, farming implements, automobiles, steel cars, and so on and on we might go until we had spent much time in merely enumerating the products of our tremendous industrial system.

Unlike agriculture and even transportation in certain forms, manufacturing did not begin with the earliest history of our country. Such articles as were produced in

the colonies were made almost entirely by hand and in the home. One exception to this is the shipbuilding industry, which began and reached importance rather early. By slow degrees this business of making things left the home, found lodgment in small shops, then in larger shops, until now we have an industrial system far beyond the wildest imagination of our forefathers.

Think for a moment of just one or two examples of the amount of work that is being done and of the marvelous growth in manufacturing trades. Charles M. Schwab tells us that the amount of steel produced in this country has increased since 1880 from less than a million tons in one year to over forty million tons, which is the amount that was produced in 1917. In 1886 the first steel girder for a skyscraper was rolled; to-day more than five million tons of steel a year are used for buildings. And so we might go on telling of the manufacture of many comparatively new articles, of steel cars, of automobiles — it is not many years since the first of these appeared, and now we need no figures in order to realize the increase in output — of bicycles, fireless cookers, typewriters, and so on almost without end. Or take an article that is not new, but the amount of production of which has increased greatly in the last twenty years. There are in this country almost 2000 shoe factories with an aggregate capital of over $200,000,000. If these figures do not seem large enough, look in the reports of the United States Bureau of the Census, and you can find the statistics of many other industries, so large and so numerous that you will be amazed at the wonders of our American industrial system.

Now, when one looks at this occupation of manufacturing, with its many intricacies of work of every conceivable kind, how is it in any way possible for him to decide whether or not he will choose it as his vocation?

How have the successful manufacturers found their places? Have they set definite goals and worked toward and attained them, or has the opportunity come to them unexpectedly? Sometimes, to be sure, men attain positions of importance in certain lines, because they have achieved success in some other business, and are sought out on this account through no definite effort of their own. Two great "steel kings" are examples of this: Andrew Carnegie, who was first a railroad man, and Judge Gary, who was a prominent lawyer. But these are exceptions and it is becoming more and more important for the young man to decide on what sort of position he will make his goal. Manufacturing is too broad a term. He must narrow it down before he can decide whether he has the necessary qualities and how he will get his preparation. He might be a mechanic or a machinist and be able to work his way to his proper place along that line; or he might have the type of mind that finds its expression in the sciences and so he would fit into the work of industrial chemist; or again he might be the more purely active business sort of person and would prefer the office and salesmen side of the concern. Moreover with any of these tendencies he might have a special executive ability or gift in handling men that would urge him on to attain the leadership in some department. The work of the chemist we shall discuss later when we come to speak of the professions. The business side of manufacturing is really not manufacturing, and will be treated under the commercial occupations, while many other branches, such as engineering, social service work, or library management, all belong to other groups as well as to manufacturing. In this place we shall try to discuss the characteristics of manufacturing that distinguish it from other groups.

Qualifications

Since this occupation has to do primarily with the making of things, let us first of all consider the qualities that are desirable for those actually working in the shops or connected with them.

1. One should have manual skill. This means the ability to handle materials deftly and to make things that are workman-like. Whether your ability is of the sort to keep you always as a wage earner, or whether you have the capacity that will put you in line for advancement, this skill is the first requisite. You will start out dealing with things rather than with people and your success will depend upon your ability to use your hands quickly and accurately. Not only success in your work but your very safety will often depend upon this; for there is still danger in slow movements in spite of the fact that many new safety appliances have been invented and installed. Then too, although machinery has been improved for the purpose of doing accurate work, there is still room for individual care, both in certain kinds of work that must be done by hand, and in the manipulation of machines. Factories are beginning now to increase the income of workmen beyond their wages by giving bonuses for work exceeding the standard requirements in quality and quantity. This improved work depends, they say, largely upon manual dexterity. Possibly the variety of skill that was necessary when one man made the entire article is not needed now, but in the part of the work to which he is assigned he must be even quicker and more exact.

Most boys are constantly undertaking, both in work and play, things that will help to test their manual skill. A man who has attained a prominent place in a profession that requires chiefly mental ability, says that he has

Courtesy International Harvester Company

These men are filling core boxes with a sand composition. You can see the ovens where the cores are baked.

Courtesy International Harvester Company

Here machines are assembled after the separate parts have been made. Each operator performs some particular part of the work and then the frame passes on to the next operator.

all his life been handicapped by an utter lack of manual skill. He would have made a serious mistake had he started out for a place in the manufacturing business. In contrast to him, let me quote from the *Scientific American* an account of how a sixteen-year-old high school boy built a motor invalid chair. What a mistake it would be for a boy of this sort to go into work where he could not use his hands! Here is the story of what he did. "He built this chair out of discarded dishpans, brass fenders, window sash chains, gas pipe, part of an old bedstead and various other wornout articles. In an amateur shop, located in his mother's kitchen, the boy first repaired the framework of a broken-down invalid chair. A heavier axle was turned upon his lathe. He had a smashed motor cycle, the wheels of which he rebuilt, cutting them from 30 to 28 inches. Pneumatic tires were the only new thing about the whole chair. A gasoline tank was made from the dishpan, and incased in a box made from the thin cherry paneling of the headboard of an old bed. Stop cocks from an old gas stove were used to regulate the flow of gasoline. A belt drive being found inadequate, the boy substituted a chain drive. A band brake on the left side of the motor chair, made from the iron hoop of an old washtub, works on a drum cut from a casting. The same lever that throws out the clutch applies the brake. The tire of the front wheel is wrapped with a brass window chain to prevent skidding, the rear wheels being equipped with antiskid tires. The lever controlling the supply of gas feeding into the carbureter is made from an old file. The cut-off valve is made from a one half inch gas pipe "T," a brass curtain rod and a clock spring. The steering lever is made from a length of gas pipe and the end of a mop handle. The 2¾ horse-power motor is air-cooled, the fan being made from an old brass fender,

and the blower-case from a tin can which at one time held a gallon of apple butter. The blower-case is covered with asbestos to deaden the sound. The boy constructed the entire oiling system from brass tubing and a little solder. A tiny bicycle lamp to comply with the city ordinance completes the outfit." You can see, indeed, that it would take qualities other than manual skill to accomplish this, but the ingenuity required is one great asset for one hoping to be a success in the manufacturing business.

2. It required the very quality that we would mention next, namely, inventiveness. That is, if one meets a difficulty, he should be able to find for himself some way of getting around it. It is probably to some extent the lack of this ability that caused one manufacturer to say that certain men with the very best training failed in his business: they knew what was in the books, but when a new problem arose they seemed helpless. In these days of keen competition, every one in a factory must be on the alert to see ways to decrease the cost or time of production, and the man with a little inventiveness can often suggest something of value. A young man, whose duty it was to load boxes of the finished product on to trucks, invented a means of loading five or six times as many at once as before. It is needless to say that he did not stay long doing that hard manual work. By this quality we do not mean a real genius for invention. That is a gift that very few possess, but there is a sort of minor inventiveness, an originality that sees how things can be done, not a rare quality but one that all persons do not possess. Another man who had this ability, while working in a glove factory, invented a way of finishing the fingers of heavy working gloves so that they would not rip so easily; one in an envelop factory, thought out a fastener that would close but not seal envelopes containing second class mail. Fred-

erick J. Allen in his book on *The Shoe Industry* tells us that most of the machines for making shoes have been invented by shoe workers themselves, often after long toil and study of particular processes. "Inventive genius and mechanical skill have been granted about 7,000 patents on shoe machinery since the establishment of the United States Patent Office in 1836." So you can see how one engaged in the making of things has an opportunity to use what inventiveness he has so as to make his machine more productive or his product more valuable. In your everyday life, you can tell to some extent whether or not you have any ability of this sort. Can you figure out how to put up shelves, how to make a refractory window work, or to mend an electric bell? If you are constantly obliged to turn to some one else for this sort of work, it is likely that your interest will not be in this branch of occupations. But if your ability is along mechanical lines, and you are interested in the work of men like Edison, Tesla, Marconi, Steinmetz, and Westinghouse; or if you are fascinated with the idea of seeing things grow, whether they be machines or buildings or great manufacturing plants, it would be well for you to think seriously about going into one of these industries.

3. One should have a liking for machinery, power, and tools. He should like to work around engines, must be able to understand how pulleys are put up, how belts are placed, and must not object to getting his hands dirty. In many factories he will have a complicated machine to operate, and in some must be able to make his own adjustments and repairs. Always he will be more successful if he can do this, for it is by fully understanding the parts of a machine that he can do the best work with it and can make it last longer.

4. The individual who would succeed in this sort of

work must be interested in his occupation enough to learn the trade and be proud of his mastery of it. If he is ambitious to rise to the position of foreman or higher, he should be able at any time to show the workmen how to do a particular piece of work. While the beginner does just one thing and may learn to do that well enough to hold his job, he must be interested beyond that if he would go ahead.

5. He should have some skill in mechanical drawing, that is, the ability to make and to read drawings. One superintendent of a factory said that he was willing to hire boys with no further equipment than that of English, mathematics, and the ability to understand mechanical drawings.

6. As a rule there must be the willingness to do heavy work, though of course this depends upon the kind of factory and one's position in it.

7. He should have the power of concentration. In many factories, under the new efficiency régime, it has been calculated just how much work can be done by each machine each minute. To accomplish this maximum, the man at the machine must not relax his attention once. One employer said that he was obliged to dismiss many girls from his factory because of their inability to keep from looking up from their work.

Preparation

Now suppose that this great industry of getting natural products ready for use attracts you, and suppose that you have decided that you have the qualities necessary for such work, how will you go to work to prepare yourself for this vocation? To state what should be the preparation of the manufacturer is by no means so simple as to state that of the professional man, the civil service employee, or

the farmer. According to many men who have reached the top in these lines the best preparation is to learn a trade. There are schools for this purpose. Also in many factories and machine shops the apprentice system is still in use. Efforts are being made to improve the apprentice system so that it may be more educative than it has been in recent years.

To repeat,— in almost every trade you will find the divisions of unskilled and of skilled workmen. The former may easily learn in the factory how to perform his task, and moreover his time for learning will probably be only a matter of days. People connected with different sorts of factories say that boys and girls come there with little preparation or education of any sort, and that they soon learn to perform some simple task at a machine or in hand work, and can earn a living; but it often takes years for these people to get into the class of skilled workmen. In the largest factories, this promotion is very difficult, as a workman is likely to be kept in the place where he is doing satisfactory work. In the smaller factories of certain trades, inexperienced persons have a better chance to learn a variety of processes. It is rather common for people who have learned in this way to enter the large factories as skilled workmen. Trade schools are to be found in large cities and public schools are more and more giving trade courses. Employers see the value of these to such an extent that in some cases they are willing to give the boys working for them two or three hours every day for the purpose of getting this training.

The higher the position for which you aim the more thorough the preparation that you will require. While a technical education gives what can be gained in no other way, the prospective manager or superintendent needs more

than this. It is well for a boy who aspires to such a position to have, first of all, a good general training. He should know, accounting, bookkeeping, and general business methods. In his days of preparation he should take part in activities that will develop his executive ability; and he should gain as much all-round information as possible; for the more he knows of general problems, the better able he will be to give judgment in his own department of work. Andrew Carnegie tells how he was once asked by President Edgar Thomson of the Pennsylvania Railway to take the position of Master of Machinery. When Carnegie told him that he knew nothing about machinery, the president replied that that was why he wanted him, that specially trained mechanics, because of their lack of all round education, lacked the good judgment necessary in a manager. This does not mean that special training is a detriment, but that something more is needed by those at the top.

One other kind of training is at the present time preparing men for these industries. It means almost as long a period as that for the learned professions. Many young men in the universities who are working for an advanced degree are doing research work in the laboratories of science. Here have been made discoveries that have been found of value in the industries that we are considering; for instance, in the making of steel, and of cement, in the tanning of leather, and the prevention of smoke. One of the best of these is the laboratory in the University of Pittsburgh, and here manufacturers often bring problems to be solved. Many young men who by working in these laboratories are helping to attain their degree, go from this work into the industries and so are prepared for important positions.

But even with an extensive technical training a young man must not think that he is ready to take a leading position in a manufacturing business. You may be surprised to learn that some concerns offer apprenticeship courses to college graduates. They pay a small wage while they are giving practical experience in every kind of factory work from the most unskilled labor to the highest skilled mechanic; besides work in repairs and in building construction. Men working in the factory may take this same course provided that they take a certain amount of night school work first. The object is preparation for work at the top of the ladder. This system is described in *Industrial Management* for May, 1917, by Dwight T. Farnham. He emphasizes the advantages of a college training — sixty per cent. of the executives in his particular business are college men — but he reminds us that "college does not make wise men — it develops them." While he himself within eighteen months had helped four technical school graduates to executive positions, it was not only their college training that helped them to rise but their enthusiasm, and their eagerness to learn the business.

Then there is still another kind of preparation, namely, the continual learning by observation, reading, and study. You may say that many a skilled mechanic has kept his position without this, but you will agree that a suggestion given by no less a person than Andrew Carnegie is worth listening to. In a message to his workmen, he urges much reading in connection with their work, and for this purpose, he has established libraries with material for this sort of study. For example he suggests that if a man whose work is connected with the blast furnace, should read and learn everything that had been done everywhere in this line, provided that he is at all inventive,

he would undoubtedly see some chance for improved methods, and so would be started on the road for advance in position.

Now, with these various sources of preparation, how will you choose the best method? In the first place if you are interested in the manufacturing business, it would be well to read up the details of the requirements of many trades. In the meantime take the work in high school that will help to develop your manual skill and knowledge of machinery. When you have finished high school, if you can afford it, take a technical course in your chosen line, always with the idea that this is the foundation and that you must learn much by practical experience later. Constantly get all of the general information possible. Then be willing to begin at the bottom, work up and learn all of the business that there is to learn. But if after your high school course you cannot afford to take more time or money for training, try to get work in some factory that has the apprentice system, and be willing to work hard and long to learn your trade. Perhaps you could find work in one of the large manufacturing establishments, which have adopted the plan of taking boys for a period of five years' apprenticeship with small pay. Here a very definite and systematic record is kept in their files and while the boy is sent from one department to another, his personality, his habits, his punctuality, his ability with machinery, his loyalty, his thoroughness, are carefully observed, so that whether or not he gets a permanent position at the end of that period is not a matter of mere chance.

Opportunities

When we consider that in this country an army of over ten million is employed in the occupations of manufactur-

ing and building, it seems that there must be room for all who are at all interested in that sort of work. And, except in times of unusual business depression, this is practically true. There is ample room, in the first place, for the totally unskilled workman; but his pay is necessarily very small — in some places not more than $3.50 per week — and his work is monotonous, consisting perhaps of constantly pulling the lever of a machine, or pouring molten metal, or carrying away the finished product. Again it may be hard physical work, such as lifting heavy material. It is true that, as he improves, he may be given a little more agreeable work, and his wages may increase to something over $8.00 per week. The carrying on of almost every trade needs a large number of this class of workers; and there are in the world many people whose abilities and ambitions are such as to keep them at just this sort of work. Besides these, as we have learned, there will be found among the unskilled workers, boys who are starting out to learn the trade and who will not long be kept in this class. One difference between the trades and the professions is that, whereas in the latter, one needs a long preparation and good intelligence even to start on the journey, here the beginner may do without either. If, however, he would grow, he has great need of the qualifications we have mentioned.

The next division of this great army is made up of skilled workmen. If a boy is starting out to learn the trade and is capable, he will have no difficulty in being advanced to this class. If he has had the desirable technical education, he may even start here, and at any rate he will be able to go ahead much more quickly than his untrained companion. As a skilled laborer his wages will increase and there is a possibility of his getting as high as $25.00 per week.

The following figures taken from the reports made by the Department of Labor will show something of the recent wages in different lines:

Trade	*Wages per week*
Metal Trades.	
Machinists	From $13.00 to $30.00
Molders	From 16.00 to 24.00
Printing Trades.	
Machine tenders	From 19.00 to 31.00
Machine operators	From 21.00 to 35.00
Press feeders	From 7.00 to 25.00
Building Trades.	
Bricklayers	From 25.00 to 55.00
Laborers	From 10.00 to 25.00
Carpenters	From 19.00 to 33.00
Cement workers	From 21.00 to 30.00
Helpers	From 14.00 to 27.00
Laborers	From 15.00 to 24.00
Inside wiremen	From 16.00 to 33.00
Plumbers	From 15.00 to 33.00
Painters	From 12.00 to 33.00
Inside lathers	From 18.00 to 33.00
Engineers (Portable and hoisting)	From 21.00 to 38.00

From Bureau of Labor Statistics, May 15, 1916. Wages and Hours of Labor Series, No. 24.

These figures are about 4 per cent. higher than those of 1915. In 1918 they rose by a much larger per cent.

From the skilled workman, the next steps are foreman, manager, superintendent, and partner. What chance has the ambitious workman to gain these promotions, and what is his part in the struggle? Those who have had long and successful experience tell us that it is easy for the right man to rise. If this is so, how are we to explain the stories of many who have tried and failed? Perhaps

you have heard Jack London's account of how he attempted to try out this theory. He applied for work in a large concern and was put at shoveling coal. He did his best and shoveled coal so much faster than any other workman, that the manager decided he could get along with fewer men, and London was given twice as much coal to shovel. The better he did, the more valuable he was found in that particular place, until the work became unbearable and he thought he had discovered that the theory of a chance to rise was a fallacy. Now was he right and if not where did the trouble come in?

Andrew Carnegie very clearly explains the secret, and we find that his judgment is agreed with by many manufacturers. They say that if a man merely discharges his duty conscientiously and well, he will be rewarded by being allowed to hold his job as long as he does satisfactory work. This is a good ideal for bookkeepers, stenographers, and bank clerks who are satisfied with their positions. And so long as it gives an opportunity of earning one's living with agreeable work, it is by no means to be despised. But in the manufacturing business if a boy would advance, he must do more than the sort of work we have just described. As Carnegie says, he must "attract attention." If he looks around, he will see many opportunities of taking responsibilities outside of his regular routine. The skilled mechanic with a talent for invention may see that by some little change his machine can do quicker or better work. This is his opportunity to make a suggestion to the foreman. Refer again to the illustrations given under the quality "inventiveness," and you will understand what is meant here.

When we were discussing "preparation" we spoke of the necessity of continual reading and study. It is here that the advantage of such reading comes in. The more

a workman knows of what has been and can be done with his particular sort of machine, the more will he be able to suggest in regard to trying new experiments. One manufacturer said that his business had lost thousands of dollars because there was no one who had done this sort of thing; and that a man who had been ready with suggestions would have been advanced to a responsible position. Such a man need have no fear of not being recognized. The men over him, in turn, know that they will be judged by their ability to choose the right man for promotion and the bigger the man at the top, the more eager he is for suggestions that will bring improvements.

To show the scarcity of really efficient men,— the president of a manufacturing concern says that he has in his files six requests for recommendations of men who are to be paid salaries of from $150 to $250 a month. But he adds that men capable to fill the positions are not to be found. Of course the higher one mounts, the more ability he must have for the next promotion, and you have already learned how the manager or the superintendent must be a man with executive ability and the power of leadership. He must be able to lay out plans of work and to calculate how much can be done in a certain length of time, and must have the power to manage men and see that they do the work well. He should be a man who can decide just what he wants done and with few words make it clearly understood. He must know the business thoroughly, the materials used, the tools, and machinery and the men who do the work. The salaries for executives are usually high, though they cover a wide range. Those at the top have an opportunity to make almost an unlimited amount of money.

Under the present conditions there is not much chance for a man to own a small shop of his own; for it not only

Courtesy International Harvester Company

These girls are making canvas aprons for binders. In this automatic machine all that the girl operator does is to feed wood slats on to a cylinder.

Courtesy International Harvester Company

These men are grinding and polishing blades for disk harrows. Notice the safety devices.

Courtesy National Cash Register Company

Men at work in the tool making department

Courtesy National Cash Register Company

Men at work in the polishing room. Suction fans carry off particles of dust and brass.

Courtesy National Cash Register Company

Boy at work on drill press

Courtesy National Cash Register Company

This picture shows guards for protecting women's hair. One of the many inventions that make factory work safer.

takes a great deal of capital to start a business, but there is a growing tendency for all manufacturing to be done by the big concerns. And so the road to success lies in working up in a big plant.

As an example of one man who worked up in the manufacturing business, Mr. Schwab, of the Bethlehem Steel Works, tells the following story. Mr. Grace, Mr. Schwab says, began by switching engines in the yards, then he operated an electric crane, and then was transferred to the open hearth department where he made fifteen dollars a week. After that he was yard foreman, yard superintendent, assistant superintendent to the general manager, then general superintendent and later general manager. This all took place within eight years. Not every one can do this just as not every boy can be President of the United States, but it helps to show the possibility of getting to the place for which you are fitted.

Many factories today increase the income of their employees by means of the profit-sharing system, and a still later scheme is that of giving bonuses. For instance a skilled workman is paid so much for so many hours in which time a certain amount of work is supposed to be accomplished. Beyond this, he is paid proportionately for whatever he does over that amount. In departments where the quality of the work is more important than its quantity, bonuses are paid on that basis. In other departments bonuses are given to the men who can handle their machines with the greatest efficiency. Every one from manager and superintendent down has a chance to increase his income in this way. Many of the skilled workmen double their wages.

Aside from making a living or, perchance, a fortune, what satisfaction does this division of work bring? First, there is the fascination that comes from using one's brains.

Carnegie speaks of the difference between building up a big business and speculating. The latter depends largely upon chance, while the former depends upon brains, upon the ability to use every opportunity to the best advantage. Progress depends upon knowledge, inventiveness, and judgment. In this every workman may contribute his part. And in this connection we might also mention the new profession, that of scientific manager. There are men who give their time entirely to this work. They are employed by factories to study their plan of work, the object being to save every possible penny and every possible minute. The workmen must not make one unnecessary movement; every bit of material must be utilized, and in all departments, brains must take the place of brawn. There is wonderful fascination in the possibilities of devising new plans of work in the industries.

Dwight T. Farnham, whom we have quoted before, says that manufacturing is not work with the genteel hours nor respectable environment of the banks, but that it is work that requires moral courage to do battle vigorously. He adds, "It is the most fascinating profession in the world, that of causing things to grow, with our own head and our own hand."

As in the case of the other occupations, we must look the disadvantages squarely in the face before coming to a decision. There is no doubt that manufacturing is a dangerous occupation; many large plants have their emergency hospitals, many have their own surgeons, and the fact that these are kept busy, shows that the workman runs some risk. Indeed reports show that great numbers are injured or killed every year. Some young men have started in this business and have changed for this very reason. Then besides the risk of accidents, there is the possibility of weakening of one's health by breathing air that is not al-

ways the best; and in certain kinds of factories, a more direct injury to health comes from the fine particles of steel in file-cutting, or in steel grinding, and from poison in the manufacture of white lead. Other special industries bring their own particular risks; and so it would be wise for us to see whether there is anything to offset this disadvantage.

First, the conditions of factory life have changed much in recent years. The majority of modern plants are improving the conditions of heat, light, and ventilation, so that the workman is in a much more hygienic atmosphere. Devices have been invented for his protection so that factory life is not so dangerous as it once was. For example, there has been invented for presses a lattice-work gate which lets down while the machine is operating, but which the operator can see through so that it does not interfere with his work. Treadles and steps are made with rough surfaces to prevent slipping, which is the cause of many casualties; and in numerous other ways efforts are being made to lessen the number of accidents.

Then, the workman, himself, may help much in this direction. A large number of the accidents are said to be due to carelessness. In one factory where the workmen's hands are frequently injured by their machines, the accident is said to be largely due to trying to adjust something while the machine is in motion. This the employees are strictly warned not to do, but human nature soon gets used to danger and becomes careless. The workman is also personally responsible in that he should be sure that he is physically fit before he undertakes factory work. In Germany boys have been carefully examined after completing their training, and if found to have weak lungs, they have not been allowed to undertake any work that would keep them indoors. In our more democratic country, boys and

girls should take that responsibility upon themselves. Again much work, such as that at the blast furnace, lifting heavy material, etc., is a tremendous physical strain, and it is only an unusually strong man who can stand it for more than a short time. So if you choose to go into this work, you must first be sure that you are "fit" and then take every precaution to keep yourself in good condition.

Another disadvantage is the sensitiveness of many trades to business depression. This is something that cannot usually be foreseen or at any rate avoided, and is the respect in which government service has the advantage over the industries. At such times often the hours and therefore the wages are cut down, or again many workmen may be turned out. In at least one large concern, the records of all the employees are carefully kept, and when such a time comes the dismissals begin with the incompetent. But this is not the case in all factories, and so every workman must at least consider this disadvantage.

Fortunately the objections of long hours and small pay that have been very real in the industries, are being gradually overcome by agreements between the unions and the corporations and by legislation in many states.

Chances for Women

Among the employees in factories in the United States there are 1,820,980 women. It would look as if this were a large opening for the girls, but we must first consider the sort of work in which they find their place. First many of these are girls and women working for rather low wages. They do a great deal of simple machine work and much hand work. One investigator tells us that while men are usually given the work that requires the most physical strength women are given that which requires the

most dexterity. The clothing factories are a favorite place for women workers, and here the girl who has skill in designing has a good opportunity. In the making of pianos, gloves, shoes, corsets, boxes, envelopes, and candy, there are numerous places for girls. But what is the prospect for the future for one going into factory work? If she is quick with her hands, she may make fairly good wages under the piecework system which is used in many places. If she is intelligent and trained, she may work up to the position of forewoman, where she will receive good pay, in the best places amounting to $20 or $25 a week. Women who have the ability to handle girls find desirable and attractive positions of this sort. Factory work varies greatly according to the factory, but in general the pay is not enough to warrant a girl's leaving her home town or city for the sake of earning her living in this way. If she is interested in the factories near at hand she would better inquire into the opportunities of learning the trade and advancing in that particular line, and unless she sees a chance of becoming a forewoman in time, or of gaining a highly skilled position that brings good wages, she would better seek her work in some other occupation, for the majority of girls and women doing the actual factory work are uneducated and have not the opportunity for promotion that boys and men in that industry have.

PRINTING

In 1909, there were 35,000 printing establishments in this country with 400,000 people employed. Printing includes no less than fifty different trades, so you can see that it is a very large business. It assists all the trades in the matter of advertising; the journalist and writer would make little progress without the printer; while all

the professions need his help in making permanent the results of their work.

Qualifications

This being a phase of manufacturing, the requirements are very much the same and need not be repeated.

Preparation

Printers must have thorough training in punctuation and in writing clear and satisfactory English. All high schools offer this training, and, besides, many now have special courses in printing. A course in drawing will be of value in the matter of lettering, designing and color-harmony. Since the printer's task is concerned with machinery, he should have not only direct training in machine shop work, but also some knowledge of the sciences of physics and chemistry. A boy who is interested in printing may plan a high school course that will be an excellent foundation for this occupation.

In this industry, particularly in the compositors' department, more apprentices are taken than in any other trade. After three years, these boys take a two years' course in the trade union night school. They are then ready to make $15.00 a week wages.

Opportunities

Printing has the advantage of being the least seasonal of all the trades, so that a workman is not likely to lose much time. There is some chance for women, especially in the bindery department. They receive, however, smaller wages than men do for the same work. The highest wages are received in the pressroom. Here the machine men earn more than in other trades. Of these the web pressman has the most complicated machine. The

Courtesy Sears, Roebuck and Company

Men who work on the monotype and linotype machines

Courtesy Sears, Roebuck and Company

Here men are making plates from the type forms that come from the composing room

Courtesy Sears, Roebuck and Company

Men working on the color presses, in the printing department

Courtesy National Cash Register Company

Making metal register cabinets in the brass foundry

foreman, while he oversees other machines, has one of his own to run. He receives over $6.00 a day, while a web pressman gets over $4.00, and his assistant, about $3.00. These men have machines made up of 50,000 parts, and are responsible not only for the work put out but for keeping the machines in perfect repair. Besides this there are the cylinder press, the platen press, and others, for all of which there must be pressmen, who get from three to four dollars a day; floormen serve for four years before they are made pressmen and are paid a little less than three dollars a day. Pressfeeders, cutters, and flyboys do whatever they are called on to do and get about $1.50 a day. The foremen in these departments get about $4.75 a day.

If you should visit the compositors' department, you would see many interesting processes, and would probably understand why such a long apprenticeship is required. You would not see much of the old-fashioned typesetting but instead, linotype men and stereotype men, engaged in casting, in one sheet of metal, forms that will print a page at a time. Then you would see proof-readers, many of whom are women. These receive from 4 to 5 dollars a day, and it is here that education is of advantage.

THE BUILDING TRADES

Closely allied with the manufacturer who is busied in making things is the builder with whom the "things made" reach rather larger measurements. Many a small boy and not a few of larger growth feel a strong instinct towards building of some sort. But the building trades include a number of occupations, though in general they are helping towards the completion of the finished product, a dwelling house, an apartment building, an office building,

the largest public edifice or the smallest shed. Doubtless many boys who are interested in this occupation have their eyes on the business of the contractor. So let us first consider what his work is like, and who are the men working under him; for it is probable that he himself began as a subordinate workman. By some people the architect is considered even more important than the contractor, and it is true that it is his name that is mentioned most frequently in connection with especially beautiful or unusual buildings. His work, however, belongs more properly with that of the professions, and we shall, therefore, not consider it at this time. The architect's plans are generally submitted to several contractors, who make bids for the work, and the one that is accepted then has charge of the entire construction. He may hire all the workmen himself, or he may in turn let out contracts for various parts of the work.

Now, when a contractor takes upon himself the responsibility of putting up a building, who are the workmen that he must have in his crew of helpers? Of course, as in other occupations, there are the unskilled laborers, next come the tradesmen or skilled mechanics, such as carpenters, bricklayers, plasterers, painters, plumbers, and electricians. There are almost a score of special groups that may be engaged in the building of a house. The contractor must know enough about all these trades so as to pick the very best workmen possible; because he is responsible for results in every one of these lines. Usually he himself has started out in one of these capacities, in most cases in that of the carpenter, who until the recent wide use of materials other than wood has been the most important man in the putting up of a building.

The contractor may, however, reach his goal along a different route. For instance, one young fellow who had been

trained as a civil engineer obtained a position with a railroad to oversee the erection of some of their buildings. That is, while a contractor had charge of the work, he was hired as a sort of inspector to see that all work in iron, rivets, etc.,was perfectly secure and well done. In this work he had the opportunity to make himself acquainted with almost every phase of the art of building. He was wide awake, alert and energetic, and after two or three years started into business on his own responsibility as a contractor. The pride and joy that a young man has in actually causing the growth of a good looking house, in seeing that every part of it is well done, and in using all sorts of new and improved methods, more than repaid this youth for not making a large income in the first years of his undertaking.

Qualifications

The requirements necessary for success in any one of the building trades are a good deal the same as those in the business of manufacturing. In almost all of the trades that go towards the building of a house the workman should be quick and skillful in the use of his hands. If you should watch a bricklayer for an hour or so, you could not help admiring the skill and dispatch with which he does his work. On the other hand, if you will notice the poor work that is often done in the brick work around fire places, outside steps, or chimneys, you will see the possibilities of lack of skill and the opportunity for an exact careful workman to make himself felt. Again you will often hear of new buildings that, while they have all the desired attractiveness in appearance, are poorly constructed and cannot last. This may be due to poor material but it may also be due to poor workmanship, and is another illustration of the need of ability.

The painter is another workman whose task, especially in the inside of the house, demands skill. Indeed in his case, to manual dexterity must be added an artistic sense. The same man who is employed as house painter or decorator may also be called upon when the building season is slack for a rather different sort of work, such as sign painting, that demands a true eye and well-directed hand.

Again, you have often seen the highly skilled work of the carpenter, of the man who takes pride in finishing his work at every turn in a truly artistic way. And we can contrast all of these well done performances with the careless work that we see in many cheap buildings. All of which furnishes a bit of inspiration as it shows the man who is interested in any phase of building that he may do his work "with a difference."

2. In accordance with the advice we have been getting in many lines in this country lately, it is well for the builder, also, to have the quality of thrift. The final loss from wastefulness will come upon the contractor, since, when he makes a bid for a building, he agrees to put it up for a certain sum. Material and wages are both so high nowadays that he must needs select workmen who do not have the great American fault or their extravagance may greatly increase the price of production.

3. If one would get beyond certain mechanical work, inventiveness is necessary in building just as it is in manufacturing. This is the age for improvements and the contractor especially must be on the lookout for new methods and equipments. Take for example the convenience devices of modern apartment buildings: the new doors by which groceries and meat may be slipped into compartments locked from the outside; the in-a-door beds; wall safes; garbage chutes. The men who are actually doing

the work have the opportunity to see the possibility of such things.

4. Every mechanic must have the quality of accuracy. We all know that work trued and squared according to exact measurements is absolutely necessary. Some people think that the expert builder is certain to be an honest man because he learns that varying from the true mark is bound to bring bad results, but whether this is true or not it shows that accuracy of eye and hand is essential to his business.

5. Adaptability or the ability to interpret in the structure the wishes of the designer is an asset to the contractor. Indeed, in regard to most of the workmen on a building it may be said that once having learned how to perform a certain process is by no means enough. In the case of private dwellings, club houses, churches, and many buildings other than purely business blocks, the planner is often an amateur and the contractor and his men must adjust their work to the ideas of the owner. In some towns, for instance, there is almost unlimited variety and individuality in the houses, and it is not at all certain that the man who has worked on one will be able to do the same class of work on another without added instruction.

6. While the contractor should understand the various parts of construction, even the knowing of all the details would not be sufficient to insure his success. For he is the head of the business and must first of all be a good business manager. He has in fact great need to be a cost accountant. He must do an immense amount of figuring before he makes his bid for the construction of a building. He must know the cost of materials, the price of labor, and how long the work will take, before he can tell for how much he can afford to undertake the building and at the same time make a fair profit. The lowest bid-

der, provided that he has the reputation for good work, is very likely to get the contract, so the contractor tries to make his estimate as low as possible, and in this way, there is danger that he may underestimate the cost and that instead of making a profit he may actually lose on the undertaking.

Preparation

Usually an opportunity is given the beginner to secure an apprenticeship in the various lines. If before starting he has learned to use a number of tools, this will help to shorten his period of training. As in the case of factories, one can learn more processes by beginning in a small place or on a small job. The larger the building the more specialized becomes the work, and the beginner will have to be alert indeed to get beyond the simplest labor. At the same time his training will be better if he begins with a well-reputed firm; for there will be used the most improved methods and tools. The young man who wants to go beyond the work of an actual mechanic should know some elementary mathematics. Higher mathematics and elementary surveying would also be helpful. The carpenter should learn how to use as many different kinds of tools as possible and should know how to read blueprints. In these days of careful sanitation a certain amount of science is almost necessary for the plumber. Again in any of the building trades, it would be well to learn as much as possible as to industrial conditions before starting; for these change so with business depression or prosperity, that a knowledge of their present condition at any time is quite important. If a boy is not attracted by the system of learning his trade through apprenticeship, he may enter one of the schools run by the various trade unions, or one of the public technical high

schools or technical night schools. The ambitious youth will if possible take advantage of some one of these opportunities.

Now with these suggestions as to training, what should the boy who wants to become a builder do? First while he is in school he should take the work suggested according to the special line that he wants to enter. Then if he can afford it he should take further training in some technical school; but if that is not possible he should start as apprentice in the line in which he is the most interested. If he aims to be a contractor he should by all means take a course in cost accounting.

Opportunities and Advantages

During the working season the pay for the building tradesman is good, and his hours are short. The unions demand for him an eight-hour day. If he is capable, well trained, and knows how to handle men, he has good opportunity for advancement to foreman, and, particularly if his training includes a technical course, to superintendent. Again, with business ability he may often be successful as a small contractor.

Then the building trades with the possible exception of plumbing and painting offer healthful employment. The work is out of doors and active, with regular hours for meals, and is conducive to the building up of strength. Even in the case of the two lines of work that have been supposed to be unhealthful, precautions have been taken so that they are not the menace that they once were. Repair work on unsanitary plumbing and lead poisoning from paints were the principal causes of disease; but a little scientific training teaches plumbers to be more careful and precautions are taken in the making of paints.

Another condition that might help the technically trained

boy to successful work is that there are few boys in the building trades who have been beyond the grades in school. This has been found to be absolutely true in a survey made of these trades in Cleveland and it seems to be generally true in other places. That being the case a boy who is interested in this work, has the required qualities, and besides this a high school training, with the mathematics, science, and business methods that would be helpful, would have a good chance to make efficient work count. A college boy who has tried it says that there is nothing so fascinating as watching a building grow and feeling that you are really responsible for the results. Two high school boys who undertook electrical contracting, and in connection with it started an electrical supply and work-shop of their own, have had all the work that they could possibly do. Another high school boy, who had unusual artistic skill, started in a photographer's shop but in a year or two decided that the painter's trade would be better for him financially and physically, and now after several years has opened his own shop and is successful.

So much for individual satisfaction. There is also the feeling that good, conscientious, substantial building helps to make one of the assets of a nation. In matters of comfort, convenience, and art the builder has a chance to help in the present and even to build for the future.

Disadvantages

The work of the builder depends upon the prosperity of the country and is affected by business depression almost before any other. Not only that, but a good deal of it is seasonal work, and except in warm climates not much can be done in the winter months. At these slack times workmen are necessarily turned off and, of course, the pay stops. One thing, however, may be said, the foremen

and the more highly skilled workmen are the last ones to go, and therefore there is decided advantage in working up in the trade.

Again, there is some danger in the work of building, principally from falling off of scaffolding and high places, or from being injured by the falling of heavy material. However, the accidents are not so many as in railroading and with sufficient care most of them can be avoided.

This is one of the lines of work in which there is practically no opportunity for women. On the architectural side women have done a good deal and are doing still more, but we shall discuss that later.

EXERCISES

1. How many of the professional persons in your community, do you suppose, have reached their present goal because of an aim which they had at the beginning of their careers? In the building trades would a similar answer apply? If not, why?

2. What is the importance of manipulative skill in manufacturing?

3. What is the value of technical training in either manufacturing or the building trades?

4. Study some industry of your community, to determine if possible what the particular qualifications of workers must be to enable them to succeed in it.

5. What effect does the paying of bonuses have upon the point of view of the employee toward his work?

6. If you know nothing about tools, machines, or manufacturing processes what would be the advantage to you of going into a shop, for, say, a summer vacation?

7. Pick a trade or hand occupation and show the possibilities of advancement through reading and study.

8. If a young man, who is learning a trade, expects to be employed in small shops or factories what would be the advantage in changing factories from time to time during the course of his apprenticeship?

9. Why would this not be necessary in a large factory where an apprentice system was supported?

10. Which of the two (8 and 9) would make the journeyman more independent as a worker?

11. A careful study of the tradesmen, merchants, and men of the professions from your city or community will reveal the fact that the leaders in civic problems will also be leaders in their respective occupations. Can you explain this?

12. In your own community what manufacturing concerns have an apprentice system? What opportunities are open to boys taking an apprentice course over those who do not take one?

13. What are the advantages of a skilled worker over an unskilled one other than the difference in wages?

14. Summarize under the headings, *advantages and disadvantages*, what seem to you to be the essential points to consider in choosing a vocation from the building trades and also from manufacturing.

15. Select from this list some occupation in which you are especially interested, or with which you are familiar, and determine answers to the following points. It will be best to select an occupation from which local first hand information can be obtained.

a. Importance of occupation (trade)?
b. What are the conditions of employment?
    1. Is physical and nervous strain involved?
    2. Does work tend toward stimulating intelligence of worker or the reverse?
    3. What are the sanitary conditions?
    4. Is there danger of accident or occupational disease?
c. What are the wages?
    1. During apprenticeship.
    2. To journeymen.
    3. What is the union scale?
d. What are the hours of labor?
e. Is the work seasonal?
f. If the occupation is a trade, is it organized?
g. What is the entrance age to the trade?
h. Length of time required to learn the trade?
i. Is the supply of labor equal to the demand?
j. Is the demand of labor increasing or decreasing?
k. What is the source of the supply of labor? i.e., through apprenticeship, or from a technical school.
l. If more than grammar school education is necessary to reach the best positions what is the nature of the special education needed?

m. If specific education is needed, and one enters the industry regardless of this fact, what are the chances of success?

n. What is the age of maximum productivity?

o. What subjects in your high school offer the greatest value as training for the trade that you are studying?

16. By inquiry of tradesmen and contractors, discover the qualifications and specific preparation that a man should possess who would become a contractor by way of working up through some one or more of the related trades. Each member of the class should supply at least one fact toward an answer to this problem.

17. Of what value will a working knowledge of design be to a building trades man? Will a similar answer be made for the machine trades or manufacturing?

18. Look up the plans that Bryn Mawr College has made for the training of women for executive positions in factories. Why is this necessary at this time?

19. Name as many positions in the manufacturing business as you can in which women might succeed.

20. Is there any work in the building trades that women might do?

21. Is there any work in factories or in building that women ought not to do? Why do you think this?

SUGGESTIONS FOR FURTHER READING

Bureau of Labor Statistics. United States Bulletin, Wages and Hours of Labor Series.

Addresses printed by the Educational Committee of the Winnipeg Industrial Bureau.

TAYLOR, FREDERICK W. *The Principles of Scientific Management.* Harper and Brothers, 1911.

CARLTON, FRANK TRACY. *The Industrial Situation.* The Fleming Revell Co.

KELLY, R. M. *Hiring the Worker.* Ronald Press Co., 1917.

IRWIN, WILL. *The Floating Laborer.* Articles in *The Saturday Evening Post.* July 4, 1914. May 9, 1914.

ABBOTT, EDITH. *Women in Industry.* D. Appleton Co., 1910.

ALLEN, FREDERICK J. *The Shoe Industry.* The Vocation Bureau of Boston, 1916.

WINDSOR, H. H. *The Boy Mechanic.* Popular Mechanics Publishing Co.

HODGSON, FRED T. *Modern Carpentry.* Hodgson Book Co.

GILBRETH, FRANK B. *Primer of Scientific Management*. D. Van Nostrand Co., 1912.

CARNEGIE, ANDREW. *The Empire of Business*. Doubleday, Page & Co., 1902

LUTZ, R. R. *The Metal Trades*. Cleveland Foundation, 1916.

SHAW, FRANK L. *The Building Trades*. Cleveland Foundation, 1916.

SHAW, FRANK L. *The Printing Trades*. Cleveland Foundation, 1916.

BRYNER, EDNA. *The Garment Trades*. Cleveland Foundation, 1916.

CHAPTER VI

COMMERCIAL OCCUPATIONS

Now we come to the last of what we have called the great fundamental groups; the following chapters will deal with those that are, in a way, helpers either to these great occupations, or to the people engaged in them. We have discussed the extraction of our natural resources, the sending of them to the manufacturer to be made into more usable form, the manufacturing itself, and the financing of these different operations. But now the manufacturer must dispose of these goods. They will be transferred from him to the wholesaler and the retailer and finally will reach the consumer, that is, the great mass of people who use these innumerable products. The great world of commerce is busy with the transferring of these goods from one to another. This, of course, does not refer merely to manufactured articles: sometimes the farm products go directly to the dealer, or the thing traded may be real estate, life insurance, stocks and bonds, or indeed anything that one person or group of persons may supply to another.

Not long ago the sales manager of a large business concern said to a group of students that commerce was the most important of all the occupations. This superlative statement may have come because it referred to his own chief interest, but at the same time we realize its element of truth when we consider that without commerce it would be impossible for manufacturing, agriculture, and many

other businesses to thrive. Indeed we shall find out that the successful farmer must have some of the elements of a good salesman, that the manufacturer must have his regularly organized sales department, that the banker, the hotel keeper, the publisher, the photographer, the dressmaker, and, indeed, practically all business people must be in a sense salesmen. We shall consider first those businesses that are concerned primarily in the work of selling. Here we ordinarily think of the wholesale stores, retail stores, mail-order houses, chain stores, and traveling salesmen. We are told that there is about twenty billion dollars' worth of retail business transacted in this country every year. Of this amount of business, only three per cent. is done by the great department stores, the mail-order houses, and the big systems of chain stores. This means that 97 per cent. of the twenty billion dollar business is handled by the small retail stores. We are sometimes inclined to think that the more prominent concerns have almost a monopoly of the selling business; but with these facts in mind, it would seem that the consideration of the small retail business might be worth while for many capable people.

We shall learn that, besides salesmen, the specialized selling business has many employees in other departments. We shall find, for instance, the accountant, bookkeeper, stenographer, private secretary, and advertiser, besides many who belong distinctively with other groups, such as, the welfare worker, the artist, and the telephone operator. And so since this group includes workers in other groups, and since others must draw from this, we see again how all work is interrelated, how necessary is all legitimate human business, and how each individual who does his work well is helping towards the progress of his country and of the world.

Qualifications

Now let us consider the qualities that are desirable in the boy or girl who would set out to make commerce his vocation. The salesman, no matter what department of commerce he enters, the wholesale house, the department store, the small retail store, the army of commercial travelers, the railroad, as passenger agent, or the place of middleman between the manufacturer and the dealer, would do well to cultivate certain qualities, which we shall consider somewhat carefully. A possible exception is the man who sells by correspondence; if he is an advertiser, he needs additional abilities, if he is a clerk in a mail-order house, he deals with things rather than with people, and his characteristics differ from those of the salesman. What then are these qualities that make a successful salesman?

1. One must be a ready talker. He must be at no loss for words and he must be able to put up a convincing argument, and not only to argue but to persuade. For this purpose he must know how to use forceful English, and should have the backing of a good general education. One man who had reached a place of importance in salesmanship, felt the need of this ability, and so took a "furlough" with the special purpose of going to Harvard University to make a study of the use of good English. A specialist who is hired by several large concerns to test the ability of men as salesmen makes a point of the sales talk which the candidates must make individually to a number of judges. This quality is not so important when the prospective buyer knows exactly what he wants, and has set out to find it. The selling in this case is a comparatively easy matter. A salesman need then only display his wares. But its value comes when the purchaser is aimless and in-

different, and the salesman must attract and hold his attention, and influence his decision.

2. A good salesman must have a pleasant personality. He should be likable, approachable, even-tempered, and accommodating. That is, he must not be cranky or grouchy, otherwise he will drive away trade in spite of other good qualifications. He must take pains to please the customer and not consider his own feelings. An incident is told of a young clerk in a department store on a rainy day when there were few customers and when the clerks felt more like chatting together than like taking the pains to be courteous to inconsiderate intruders. A bedraggled woman came in and this young man was the only one to leave his friends and give pleasant attention to her every want. It was only an incident in good salesmanship which nine times out of ten would pass unnoticed. In this case, it happened that the customer was a wealthy and influential woman and that the courtesy of the young man brought him a position of great importance and reward.

3. He must be observant and a judge of human nature. He must size people up correctly as to the kind of goods they would probably buy, and must offer those suited to their purse and tastes. Customers sometimes leave a store feeling disgusted because a salesman has very evidently made too low an estimate of their income, and is seemingly afraid to offer more expensive goods, or has urged on them articles inconsistent with their taste. On the other hand, some are forced to try another place because nothing is offered that is within their means. A salesman should learn what kind of argument will appeal to each person. Some clerks feel that it is not worth while to take this trouble, they think that the whims of many customers are unreasonable and they are too independent to consider them. But

as a matter of fact, we are all dependent upon one another and cannot get through this world without catering to the wishes of others. Here is an example of a salesman who understood human nature. A man went into a store to buy a Victrola for his wife. He intended to buy one at a certain price because he had been told by a friend that that kind was very satisfactory. The salesman said: "I know what an exquisite ear for music your wife has; and while this machine is good, I should like to have her enjoy this more expensive one which has a tone much better suited to her taste." After that, it didn't take much arguing to persuade him to buy the better instrument. This was not insincere flattery, something that seldom works, but it was using a fact that according to the laws of human nature was pretty sure to make its appeal.

4. He must be systematic and patient in giving his attention to details. He must be particular about the arrangement of his stock, and must be able to put his hand in an instant on any article that is called for. A merchant who had, in respect to location and the quality of goods carried, the best store of its kind in his town, lost an immense amount of trade and all but went into bankruptcy because often neither he nor his clerks were able to find the things called for. People would have to wait so long while an old-fashioned search was made for the desired article, that they preferred going to another store. Attention to details would have made an immense difference in that business. Not only in the handling of goods but in the keeping of accounts and the making out of sales slips, this same quality is necessary.

5. He must take an active interest in the goods which he sells, and know them thoroughly in all their parts. He must know how they are made and what they are made of; what their good qualities are, and what they are used for.

This means being willing to work hard so as to learn one's goods from every point of view. A woman remarked recently that she thought that girls who sold cooking utensils should have a course in domestic science so that they would be sure to know the uses of different pots and pans, and to tell customers why certain shapes, materials, and sizes were better for certain purposes. Dry goods clerks are sometimes given definite courses in textiles and styles, and it is easy to see the need of this. It is sometimes even laughable to see the dependence of the buying public upon the opinions and information of the salesmen; but at the same time this shows the importance of the salesman's getting reliable information.

6. And this leads us directly to our next quality, namely, a habit of absolute honesty of statement. Charles M. Schwab makes the following statement: "Integrity, incidentally, is one of the mightiest factors in salesmanship. If you have a reputation for stating facts exactly, for never attempting to gain momentary advantage through exaggeration, you possess the basis of all successful salesmanship."

7. The successful man in the commercial occupations should know something of accounting. Business is based on the making of profit, and goods must be sold not only for a greater amount than that paid for that particular article, but all the overhead expenses, such as store rent, taxes, salaries, equipment, and advertising, must be taken into account. Nothing is gained by selling an article without a reasonable profit. Since, as we said before, the small store represents so large a part of the retail business, there is a possibility of the capable salesman's coming to have a store of his own. In such a case it is absolutely essential that he have a thorough understanding of cost accounting. A business man says that there are more failures from a

Courtesy Sears, Roebuck and Company

Another kind of clerical work. A hundred clerks are sorting orders, according to the way in which the goods are to be shipped.

Courtesy National Cash Register Company

A salesmen's school in session. One cannot do any kind of work well without adequate training

lack of "counting the cost" than from any other one cause.

So if you are going to be a salesman, you must first of all be able to talk readily so as to present your proposition well; next, you must cultivate a pleasant personality with a habit of being gracious to all sorts of people; you must understand people well enough to know how to appeal to them; you must be carefully systematic in every detail of your work; you must be willing to work hard to learn both your particular business and general methods of accounting, and must have the quality of absolute integrity. You can see the differences between this and the other businesses we have talked about. You are dealing with people more than with things so that manual skill and dexterity do not count so much as the qualities that aid in influencing men and women.

Preparation

If you decide that this is your work, you will at once set about getting the necessary preparation. More and more the demand is for trained salesmen. Paul Nystrom, in his *Retail Selling and Store Management,* makes this prophecy, "Salesmen will be recruited from the ranks of graduates of high school and college courses in commerce, and salesmen will be taught in a manner similar to the present teaching of other vocations in industrial schools." Already some stores demand that their salesmen have a high school education, and some of the largest stores are trying to get college men. The use of good English is important: sometimes a sale has been lost because of a poor command of English. Some of the department stores have found this lack so great that courses in business English are given to the clerks. Salesmanship is an oc-

cupation in which the high school boy or girl has the advantage. Then a salesman should have a good training in arithmetic so that he can make change quickly and accurately. A young man progressed rapidly as ticket seller in a railway terminal because of his unusual ability to make change quickly. You may be surprised to learn that a number of storekeepers who were questioned regarding the school training of boys mentioned this particular thing.

Where is the boy or girl to get the necessary training? Courses in salesmanship may be taken in many high schools and colleges and there are special schools in salesmanship, the best known, perhaps, being in Boston. In the schools of commerce not only salesmanship, but cost accounting, business methods, advertising, and stenography, are taught. If you are not able to get this training there is another chance open to you if you can secure employment in some of the large department stores. Here a sort of secretary is hired who has charge of regular classes and courses of training for the employees. Those who are eager to advance may take a three years' course. They are instructed in the store's system, have demonstration sales, study textiles, have experience in the marking room, adjustment bureau, at the cashier's desk, in the millinery, drapery, art-goods, alteration, mail-order, invoicing departments, and the bureau of accounts. After a period of such instruction they are given actual experience in selling and are ready for promotions. We are told that the high school graduate will make much more rapid progress in this course than the boy or girl without that amount of school work.

Moreover, no matter what his preliminary training, the salesman must be continually educating himself. We have spoken of the necessity of his knowing all he possibly can

about the goods he has to sell. He cannot learn this once for all, but must be constantly reading and studying so as to keep informed about new materials and new articles that will be introduced from time to time. There are trade papers from which the salesman can learn much. These contain consultations on various subjects and he may write to them for advice when he is perplexed. We said in talking of qualifications that a pleasant personality was an important point. Usually we think of personality as a sort of mysterious thing with which people either are or are not naturally gifted and which is beyond their control. Mr. Nystrom, in the book from which we just quoted, says that "a complete knowledge of his goods will often take the place of personality." Rather, it seems to me, a complete knowledge of his goods, together with a courteous way of using that knowledge, goes a long way towards creating a pleasing personality. Imagine for instance a young woman who is trying to sell a high class sewing machine. We may say that the buyer does not know the advantages of one machine over another. The saleswoman knows in just what respects hers is preferable to each machine that the buyer may mention. This absolute knowledge gives her a poise and a calm way of talking that adds to the charm of her personality. In a helpful way she can tell how the machine may be kept in running order, why certain parts are durable, and just how and for what purpose to use each patent atttachment. If she has a thorough knowledge of her machine and has cultivated the habit of being interested in the problems of her purchaser, she has gone a long way towards gaining a pleasing personality, and in this manner she is getting a certain preparation for her work.

So if you are interested in salesmanship, first of all take all the commercial work possible in high school; then if

you can afford it, go to a school of commerce, preferably one connected with some university. But when you begin to work, no matter what the position with which you start, take advantage of every possible bit of instruction that you can get, and never stop trying to grow in your work.

Opportunities

In general there is always a demand for a good salesman. The selling end of the business determines its success, and the man who can sell goods is pretty sure to find a place. But in this, as in other lines, the most room is at the top. Mr. Chalmers of Detroit, a noted automobile manufacturer, is the authority for the statement that there are very few $10,000 salesmen. He can get plenty of men whom he would pay from $3000 to $5000, but $10,000 men are scarce.

This may give you a wrong idea as to the financial returns of the salesman, but the truth is they vary so that it is hard to get any standard. At least Mr. Chalmers' statement shows us that the most successful salesmen, those holding the best positions in the best firms, command very good salaries, and that the selling of goods is such an important part of all business that a company can afford to pay a big amount to the man who can really bring results. So there is a goal at which to aim. For the average young boy and girl, however, wages are very low; and those who leave school to clerk in a store before they have graduated from high school, have not much chance of advancing far. For instance, in some stores, beginners are paid $4.00 per week, and may in time advance to $8.00. On the other hand, in many stores, the nominal wages do not show the actual pay. Some give an extra amount for selling certain goods, some pay more during the holidays, others allow employees to buy their goods

at a discount, while the traveling salesman has a big opportunity to make money on the commission basis.

As to hours, the law has adjusted them pretty well. Most stores in the large cities close on Saturday afternoon during the summer, while in the smaller towns they usually keep open on Saturday night. However, it is seldom that the hours are excessively long, and conditions as to ventilation and other comforts are all the time getting better.

As in other occupations, opportunity comes to the one who can suggest and work out new and useful ideas. He is the one who rises to the higher positions, such as sales manager, manager, or even proprietor of a store. For him there is the widest opportunity to make use of judgment and executive ability. How much depends upon the construction and equipment of his store, upon the choice and treatment of his employees, upon a careful system of cost accounting, upon buying the right goods,— goods that are in demand in one locality are often useless in another, for instance, it is said that ready-made garments of a size that will sell in the West are too large for the average woman in New York,— upon, in fact, numberless schemes and calculations which, taken altogether, form a most fascinating proposition.

The following is a point of attack that is being used by sales managers a good deal of late. Instead of trusting entirely to the skill of the salesman, who, we used to be told, should be able to sell anything to any one whether or not he wanted it or could afford it, now many managers are of the opinion that a thorough canvass should be made to learn just what sort of things are needed in certain localities. They then offer a grade of those things at a price that the people can afford to pay. For instance, a dealer in motor trucks for farmers made a study to discover

how many trucks a certain farmer would need in order to carry on his business in the best way. He calculated that while this particular man had only one truck he needed exactly three. So he went to him with this proposition and proved to him that he needed two more trucks. He made his sale, whereas without this method and with only the powers of persuasion he might or might not have sold one. An instructor in a school of commerce was employed by a large commercial house to organize its business on this basis. He did very thorough work simply planning the sales territory so that goods were offered just where they would be of use and so that just the right amount was offered. The business increased so rapidly that the young instructor was offered a permanent position at a much larger salary than he was then making. So much for the value of having a thorough training and of keeping awake for new methods. On the other hand, as an illustration of the fact that bright men sometimes think that there are other allurements more valuable than money, we might add that this particular man preferred the satisfaction of teaching to the larger salary in the business world. But besides the interest in management and the financial return, there is an interest in salesmanship that probably most people do not think of. This point can be best expressed by quoting again from Mr. Nystrom's book: "The present standards of living and of comfort are due largely to the salesman. The vast number of people who are carrying life insurance, and who own sewing machines, is due largely to salesmen. While this is not the usual motive, the result is the same, and the salesman has the opportunity of feeling that he is helping the progress of his age."

You will have no trouble in calling to mind the names of many men who have been preeminently successful in the

commercial business. Before taking up some other lines of work belonging to this group, it might be interesting to see what some of these men have said about salesmanship. While more business in the aggregate is done by the small retail stores, yet the largest establishments and those of which the founders are best known are the department store, the mail-order house, and the chain store. As an example of the ideas of a great department store, here are a few sentences quoted from a little book that is prepared by Marshall Field & Company for their employees.

"Older employees are expected to set a proper example of courtesy, energy, cheerfulness, and enthusiasm to those around them."

"The habitual making of mistakes will be considered cause for dismissal."

"You will have patience in serving customers, showing goods willingly and pleasantly, without asking too many questions as to price, width, size or color. See that every customer in every transaction is the chief point of interest in your mind at that time."

"Inasmuch as the expansion of this business necessitates continual additions to our force of employees, applications from capable persons are always welcome."

"More and more we wish you to be intelligent, loyal, and progressive. We propose that this great store shall be even more than ever a field for employment in which 'merit shall win,' and we desire that the possible careless, temporary overlooking of any employee shall never prevent that person from obtaining the fair recognition which has been earned."

Mr. Sears, of Sears, Roebuck & Company, built up one of the largest mail-order houses in the country. He himself said that he worked on the basis of finding out what a great many people wanted and where these people were,

and then of offering them these goods at a reasonable price. This, you see, is much like the new method in salesmanship.

The president of a system of chain stores issued a series of rules for his clerks. Here are just one or two out of his many suggestions: "A customer asking for something not in stock should never be told in so many words that there is a substitute 'just as good.' Cut out that phrase. Earnestly recommend as possibly acceptable whatever you think will satisfy, but leave the impression always that the customer better knows what he wants than you do."

"Try to remember just what your customer wants. He will appreciate the fact that his preferences are kept in mind."

"Know your stock as you know your way home."

"Read the trade journals at home and keep yourself posted in the details of your business. A man who succeeds in this or any other business is the man who realizes that he does not know it all, but takes advantage of every opportunity to acquire useful information."

This president himself started as a clerk, and has developed this great system of chain stores.

Notice how every one of these opinions of the three men quoted illustrates some one of the qualities we have been discussing.

THE OFFICE FORCE

We have talked of the selling side because it is the side that actually brings in returns, and because after all selling is the business of commerce. But just as we found in railroading that, while the transporting of passengers and freight is its main business, it needs a big office force to keep the organization in working order, so in commerce, there are endless details aside from the actual buying and

Courtesy Sears, Roebuck and Company

The sort of work that is done by indexing and filing clerks

Courtesy Sears, Roebuck and Company

Correspondence department of a large mail order house, where many typists find pleasant work

selling that demand a good corps of workers. This office force, indeed, is found in almost every industry. It is made up of stenographers, bookkeepers, secretaries, clerks, credit men, cashiers, telephone and telegraph operators, office managers, filing clerks, and many others. Many people who do not have the "knack" of selling things, can make good in this other side of commercial work. What, then, are the requirements for these office positions?

Many young men and women start as stenographers and typists. To succeed here, they must be quick in their movements, have good memories, and the power of long continued concentration. The quick and accurate movements must be gained by training and much practice. Even when a stenographer has completed a course in school she has not always reached her greatest efficiency. There is at present a tendency to reduce all power to actual measurements, and this, certain business houses have tried to do with stenography. In February, 1916, the magazine, *System,* told of an experiment of this sort. In a certain office a stenographer who was making $15 a week told her employer that she thought she was worth more than that. He replied that they would test her efficiency, which they did by means of a schedule that had been worked out. By this definite test they found that she was worth not $15 a week but $9. She herself was surprised at the result and set out to work up to a higher efficiency, and it was not long before the same test showed her worth $18 a week. The following is the standard that was set at that time. For work that was considered 100 per cent. efficient $18 a week was paid. This meant that the typist could write at the rate of sixty words a minute for fifteen consecutive minutes. This would be about five minutes for the ordinary type-

written page. This at least gives a standard by which one might judge what he could do and what that work was worth. The use of stenotypy, a sort of machine shorthand, instead of the usual stenography is coming more and more into demand. The writing has the advantage of being much more easily deciphered.

Preparation

A typist who can spell, use good English, and has a fair amount of general information, is rather rare and in demand. A business man appreciates a stenographer who can write a creditable letter after having been given the main points, without having it dictated word for word. A thorough preparation for such high grade work may be had in many of the public schools. This has an advantage over the course that is given in the distinctively business schools, in that there is opportunity for a general all round education.

Opportunities

Many boys and girls take a short course in stenography and typewriting and feel that they are then ready to earn their living. This makes a good deal of competition among the beginners; but those who have a broad general education, and become expert in their work, have no trouble in getting good positions. A stenographer who becomes a private secretary has a chance to learn the inner workings of a business, and so if he has ability is in line for a position of importance. Many successful men started in this way. But one hard and fast rule, the private secretary must remember: he is in a position where strict loyalty must be observed, where all the information which he gains about the business is to be considered absolutely confidential. If he can not do this all the ability

that he may have will not help him to rise. Besides positions in offices of all sorts, there are other openings for stenographers. Sometimes a young man or woman will rent desk space and advertise as a public stenographer. There is especial chance for this in or near hotels which are patronized by commercial travelers. Again, another position to which the most expert aspire is that of court stenographer which is well paid but rather trying work.

Another common office position is that of bookkeeper. Here the chief requirements are neatness and accuracy, and here, as in stenography, one must be able to concentrate so as to be able to accomplish his work amid the noises and distractions of a busy office. Although it is said that "every house has its own system of bookkeeping," still it is necessary for a bookkeeper to learn the general theory of accounts. Often a bright young man is able to devise new schemes for the particular business for which he may be working. He may get fundamental training in bookkeeping in his high school course or he may attend a business school, or, better still, if he should take the commercial course in a university, he would have a thorough, well grounded course that would enable him to start out as a bookkeeper and to attain a more responsible position. Frequently a successful bookkeeper will become a public accountant or auditor, and will be engaged by a business house to examine the books of its bookkeepers. The cost accountant of large firms was in most cases first a bookkeeper.

Office work calls also for clerks to perform many different kinds of work. The chief requisites for success as a clerk are quickness and accuracy. In most large offices are found filing clerks. These, as the name implies, have charge of the files and must be able to classify any paper so that they may be able to lay their hands upon it at a

moment's notice. There are shipping clerks, clerks in charge of adjustments and complaints, and numerous others needed to keep the business going. There are "credit" men who deal with the people who wish to have goods charged.

However, if one has the desire to go into commercial work, he is not so likely to choose some one of these office positions, but to start wherever an opening is offered, and then gradually, if he is eager to learn, both he and his employer will find out for what he is best fitted. If you are inclined toward the commercial life in distinction from manufacturing, agriculture, or the professions, you will probably get all the training possible in the high school, and in the university if you can afford it, then you will start either in a business office or as a salesman, and by keeping your eyes open and continuing the process of education, you will have a pretty good opportunity of rising to the place for which you are fitted and in which you can do the best work.

Disadvantages

The work is so various that it is hard to say what these are. In general it may be said that the business world is strenuous, indeed, exceedingly hard on those in responsible positions. Competition is keen, and the rush and tumult are hard on nervous natures. However, many offices are pleasant places in which to work, and for one who has the sort of constitution to stand confining, steady work, there are many advantages.

Chances for Women

This is a branch of work in which women have a good opportunity. You don't need to be told of the salesmen in the stores, many of whom rise to better paying

and pleasanter positions as heads of departments and buyers. The report of the United States Census for 1910 showed 209,937 more women than men employed as stenographers. These figures go to show that this is a place where there is a pretty good opportunity for girls. Women are also filling practically all the other kinds of office positions with good success. And it is not very rare for women to become managers and even partners in a business. Mrs. Netcher, of the Boston Store in Chicago, is an example of a woman who has achieved a remarkable success in this line. Many other women have managed stores and shops of their own. In fact, there is practically no kind of position in the commercial world that is not somewhere filled by a woman.

ADVERTISING

Advertising has come to be a business in itself. The big commercial establishments have their advertising departments which are made up of several divisions, such as, newspaper advertising, art department, sign department, circular and announcement departments, and window decorating. Then besides the advertisers connected with any special business house, there are companies whose business it is to advertise other people's products by display on sign boards or in the street cars. Newspapers often prefer to negotiate for advertisements with an advertising company rather than directly with the advertiser.

Qualifications

There should be a nimble wit to know what will attract attention and how. There should be skill to put this in an appealing form, either skill in using words, or artistic skill in sketching illustrations, or in designing a beautiful arrangement for dressing windows.

Preparation

There are courses in advertising in the business schools. Even though one has the natural ability to pick out what is important, he must be trained so that he can say it in the fewest possible words, and still get the desired result. This takes training and much practice. Then one at the head of such a department must be trained in business management. It is necessary for him to find out from the various departments what is to be advertised; to keep filed all the advertisements from his store and from others that deal in similar goods; to keep account of all costs, and to know the space allotted to the various departments. It is readily seen that all this takes some training. It can also be seen that training for certain other lines of business would also help here. In fact, it is usually a man trained in newspaper work who is selected as an advertiser. Sometimes, also, he is selected from the store, where perhaps he has shown as a salesman, by his suggestions, that he has the instinct for advertising.

Opportunities

There are a good many openings in the advertising field. In a commercial house, this department is usually organized in the following way. At the top is the chief executive, the advertising manager, and next his assistant, and the office assistant. Then there is the head of the art department and the artists under him, all of whom we shall study, under "the artist in commercial work." Then comes the head window dresser and his assistants. This man is a sort of practical artist. More and more the stores are aiming at artistic effects in their windows. The window dresser has somewhat the same ability as the designer and draper in the dressmakers' trade.

A boy who wants to go into this business may start as an errand boy at $3.50 or $4.00 a week. Then if he could prove that he had the ability, he might begin to write advertisements, at $12.00 a week. From that point the salary increases to $30.00 a week. Then he might work up through assistant manager to manager at a salary ranging from $30.00 to $50.00 a week. Some of the best positions pay a salary of $10,000 a year. However, it is the educated boy who has taken time for special preparation who will rise to these higher positions. The girls also have a chance here. One young woman is drawing a large salary as editor of the advertising magazine for a wholesale millinery establishment. Another young woman who has just graduated from college is employed as advertiser by a medium sized retail store. A young man, a college graduate, who tried teaching and found that he did not fit, obtained a position as an agent for the owner of a system of sign boards. This, of course, calls chiefly for the ability of the salesman; but here he found himself and is doing very successful work.

EXERCISES

1. Explain in what way the farmer must be a salesman. Mention some of the people to whom he may sell his produce.

2. Is it possible for a salesman to spoil a sale by talking too much?

3. How can one improve his English if unable to attend school?

4. In some businesses there are sales talks and arguments printed by the company and given to the salesmen. These they are expected to memorize. Do you think this a good plan or not? Give your reasons.

5. When you go into a store to make a purchase, do you prefer a salesman who is interested in your wants or one who seems indifferent? Why?

6. Is a salesman always able to tell by appearances whether to offer expensive or inexpensive goods to his customers? What can he do in such a case?

7. Is a large credit department a profitable way to manage a retail business? Give your reasons. How often should bills be sent?

8. Will a shoe clerk be a more successful salesman if he knows about the preparation of leather and the making of shoes?

9. At the beginning of the war there was a sudden rise in the price of almost all lines of merchandise. Was it good business to sell the goods on hand at the old price or should they have been sold at an advance?

10. The day has passed when a man must be a "good sport" to be a successful salesman. What has caused this?

11. Is it wise for a young salesman to work all day and attend school in the evening?

12. Is it better for a beginner to be in a small office where he has many different kinds of work to do or in a large office where he does just one particular thing? Would the latter become monotonous?

SUGGESTIONS FOR FURTHER READING

GILBERT, ELEANOR. *The Ambitious Woman in Business.* Funk & Wagnalls, 1916.

STEVENS, BERTHA M. *Boys and Girls in Commercial Work.* Cleveland Foundation, 1916.

LLOYD, JOHN F. *The Boy in Business.* J. Long, 1916.

O'LEARY, IRIS P. *Department Store Occupations.* Cleveland Foundation, 1916.

NYSTROM, PAUL H. *Retail Selling and Store Management.*

Article in *System*, Feb., 1916. "How much is your Stenographer Worth?"

REED. *Salesmanship.*

SHELDON, A. F. *The Art of Selling.* Sheldon University Press, 1911.

CALKINS. *The Business of Advertising.*

SCOTT, WALTER DILL. *Influencing Men in Business.* Roland Press Co., 1911.

SCOTT, WALTER DILL. *The Scientific Selection of Salesmen.* Article in *The Advertising and Selling Magazine*, Oct. and Nov., 1905.

LORIMER, GEORGE H. *Letters from a Self-Made Merchant to His Son.* Small, Maynard & Co., 1904.

EATON, JEANNETTE and STEVENS, BERTHA M. *Commercial Work and Training for Girls.* The Macmillan Co.

ALLEN, FREDERICK J. *Business Employments.* Ginn & Co., 1916.

CHAPTER VII

THE PROFESSIONS

Referring once more to our diagram, let us see how the professions fit into the complicated scheme of occupations. Built upon the four or five groups of fundamental occupations, just discussed, are what we have called professional services. As we go on, you will see that these serve as helpers, in most cases as indispensable helpers, in the various groups of occupations we have studied. With every profession, we shall try to discover how it helps each occupation.

Under the professions, I would include the occupations of the lawyer, the physician, the teacher, the dentist, the engineer, the minister, the professional chemist, and many others. There are in all these lines certain conditions that require characteristics somewhat distinct from those of the farmer, the business man, and the manufacturer. For instance, if one chooses a profession, it should be for some reason other than the hope of making a great deal of money in it. It is possible that from our study of the professions, some of you will feel that you are especially qualified for one of them; or the actual work and ideals may appeal to you more than those of some more lucrative business. Then the choice should be made for these reasons; for the money rewards, in most cases, are not comparable with those to be obtained in business. A banker said of a professional man in his town, "S. has the best business

head of anyone I know. Why didn't he go into business? He could have made a great deal of money." The banker did not realize that there are ideals other than the making of money that sometimes determine a man's career.

Qualifications

The qualifications are different for different professions and will be taken up in detail later. But at least one trait is necessary for all. A professional man must be a student. Not only is this necessary during the years of preparation, but it must be a perennial process, in order that he may keep up with the progress of his profession.

Preparation

One cannot enter a profession unless he has enough capital to get the necessary education. In nearly every instance, a long period of training is required,— from four to eight years beyond the high school. The person without this training is seriously handicapped, and in some cases cannot enter upon the work at all because of legal prohibition. Of course there have been exceptions in the cases of boys without money,— and of girls too, for that matter,— who have been particularly eager to enter a certain profession; and have earned their preparation by working in vacations and late at night, but two things must be considered before undertaking such a course. One must allow a much longer time to complete the preparation, and one must have an unusually good constitution.

Disadvantages and Opportunities

1. In some lines, as, for example, in the work of the physician and engineer, there is a good deal of physical risk, while in that of the lawyer, or journalist, if one

stands for what he believes to be right, he often loses out financially or in popularity.

2. Then, there is nearly always a "starvation period" when the young professional man begins his work, for no one wishes to entrust important responsibilities to the inexperienced practitioner.

3. Most professions, especially law, medicine, and engineering, are greatly overcrowded; and, in all, the progress is slow and the competition severe.

4. On the other hand, the professions offer an unusual opportunity for a life of honor and dignity; the opportunity to be of service to one's community, and to live up to one's ideals.

With this much of a general introduction, let us consider a few of the professions in detail.

THE LAW

When most boys think of being lawyers, they picture themselves in court, pleading a case and by their eloquence and logic winning the jury over to their way of thinking. But that is only one phase of the lawyer's work, and some lawyers never have any such experience at all. More and more of the lawyer's work is being done in his office, in the settling of estates, in determining legal points concerning real estate, making wills, drawing up legal papers, and giving advice on countless matters. Indeed, many cases that formerly were decided definitely in court, are today settled by lawyers submitting their evidence to the judge, without public trial.

There are two main branches of legal practice, that of the bar, or the practising attorney, and that of the bench, or the judge. Then there are also the divisions of criminal law and civil law. An attorney may specialize in

the law of corporations, in damage suits, in the laws regarding real estate, in patent laws, or the legal side of the bond business. And so there is another way of dividing the lawyer's work; namely, into office work, and court work.

Thus we may see that in the profession of law, there may be many kinds of work calling for many types of mind and it has included in its ranks many of the strongest minds of our nation.

Qualifications

1. A quality that we are likely to think of first is the love for debate. The lawyer must be interested in the logical rather than the emotional side of a question. He must be able to pick out essential points and to connect them with other cases, and at the same time to catch all small points that have a bearing on his case. He should have the habit of holding to facts rather than theories. A lawyer gets real joy out of a sort of mental battle. He is, indeed, such a good fighter that he can take his enemy's blows gracefully. He delights in a fair fight.

2. Not only is it necessary for a lawyer to be capable in argument, he must also be able to give clear, forceful expression to his thoughts. For this he needs a rich vocabulary, and the native ability to utter directly and to the point what he has in mind. A good use of words will make his arguments more forceful. Have you noticed that even in ordinary conversation some people seem to have the ability of impressing others with what they say. There is a commanding, clear-cut manner that takes hold, while others may say practically the same thing and make no impression. Watch yourself and watch other people to see what is meant by this ability and how far you have it. Do you have the power of speaking convincingly?

3. As has been said in regard to all professions, the lawyer must have a studious attitude of mind. The consultation with a lawyer presupposes on his part a vast amount of legal knowledge. Frequently he must be able to cite authorities. The most successful lawyers have been learned men devoted to their books. Not only must there be a large general knowledge, but in almost every particular case the success depends upon the thoroughness of preparation, so that the lawyer must keep right at his studies and should be primarily an intellectual man. He spends much time in the law libraries, delving into the rather heavy looking volumes there. Are you naturally a student, and would you be willing to pore over books for much of your life?

4. He must have a knowledge of human nature. He is dealing largely with people, and must be able to judge what they are likely to say or do. He should be able to handle men, not as the foreman who must be able to make men work, but rather as a leader who makes men think and feel and see things as he thinks and feels and sees things.

5. The best lawyer will have a strong desire for justice. All acknowledge the necessity of this in the judge, but it is also essential in the attorney. While he should be interested in his client, and call up all his energies and knowledge to help his case, the highest type of lawyer will see and work for what he really believes to be just.

6. As was implied in the first point, a lawyer must be bold and courageous. In the lives of the greatest lawyers, this quality is almost always emphasized. Not only is this necessary in standing for decisions that he really believes are just, but the business of the lawyer is of necessity a sort of fighting business. He must be ready to meet opposition; for much of his work concerns the settling of disputes and the winning out against strong odds.

Even a woman lawyer has been known to fight and win a case against a big corporation, a case of such importance as to put the corporation out of business.

Preparation

The first class lawyer will have a three-year course in a law school, usually preceded by a college course. Young men used to prepare by reading and working in some lawyer's office, or by reading law at night while they worked in the daytime in some other line. These methods are sometimes used now, but a course in a law school, with its opportunities of instruction from eminent men, and of practice in type cases, is almost essential to the highest success. In either case, the state bar examination must be passed before the lawyer is allowed to practise.

The lawyer must have a vast amount of general information; he must know the history and principles of law, and must be acquainted with economic and social conditions. He should study the lives of great lawyers to learn where their power lay; and should have much training in order to develop skill in debate, and in picking out essential points. When we consider that the study of law includes civil, criminal, constitutional, and international law, and court procedure, we can easily see why all this means years of preparation. Many lawyers today are specialists, and must know all the intricacies of their particular branch. For instance, the patent attorney must be prepared to consider the principles of mechanics, and electricity, besides the purely legal side of the question.

Opportunities and Disadvantages

The advantages and disadvantages of practicing law are so closely related that we shall consider them together.

After the expense of preparation, one must still have

capital enough to invest in the necessary books. These are high priced and must be considered an expense in addition to the office rent which will seem heavy before the practice is fairly begun. Both of these expenses may be lessened if one is fortunate enough to get into an office with an older lawyer.

2. Then it is generally admitted that the profession is very much overcrowded. In almost every city there are many former lawyers engaged in some other business, particularly in real estate or insurance. The start is a hard struggle and if for any reason one drops out for a time it is almost impossible to get back in line. It is natural for a lawyer to turn to real estate; first, because his legal training has made him familiar with the laws concerning property, and second, because it is a business which he can enter without much capital. But the fact that so many lawyers have given up practicing shows that their prospects were not exceedingly good. Again, in connection with this same point, many who have specialized have found that there is not the opening in their line that they had expected. For instance, most of the bond companies have come to attend to many details themselves and to turn over the work demanding a final legal opinion to some specialized company organized for this purpose. The Title and Trust Companies do a great deal of the business that the individual lawyers used to do. So that now the independent lawyer who has specialized in the law relating to stocks and bonds finds very little to do. The testimony of lawyers, successful and unsuccessful, bears out the idea that the struggle is hard and the opportunities comparatively few.

3. But there is another side to the disadvantage just mentioned. Success in law does not depend entirely upon private practice. The fact that much law business is

done by the law firms and that the corporations are inclined to hire their own lawyers in permanent positions, shows that right there is an opportunity for the exceptionally capable man. To be sure he must first prove his ability in some way and the number of these positions is limited. We have already learned in studying the opportunities in government service, that many young lawyers who have started working there in connection with the patent office, have stepped into very fine positions in law firms of this sort. Probably the best thing for a young man is to get his start in the office of some good lawyer, and then to keep his eyes open for every possible opportunity. Sometimes he can tide over the hard period by getting work with some law publishing company. One young man who had had the advantage of a splendid education and introduction, made a good reputation and in a comparatively short time was appointed as a lawyer on a railroad commission with a salary of $8000 a year. There are always opportunities for the best equipped men.

4. Many boys are attracted to the law because of the belief that it leads to political position. This is partly true although success in politics depends much upon diplomacy. However, the knowledge of national institutions and the training of the lawyer tend to fit him for political life and for statesmanship. Many of our senators and governors come from the ranks of lawyers.

5. One of the greatest drawbacks is the temptation to give up one's ideals for the sake of position or money. A prominent judge in Chicago said that he did not want his son to be a lawyer, because the struggle against this temptation was too great. On the other hand, this very condition makes it possible for the lawyer to stand by the highest ideals. If his motives are unselfish, he may look upon himself as the defender of justice, and of the

very foundations of the state. He has an unusual opportunity to take part in public affairs. He becomes a leader, one of those on whom the reputation of the state depends. If you read the careers of our greatest lawyers, particularly of the judges of the Supreme bench, you will find many instances where a clear insight into the justice of the case, and a willingness to stand by conclusions has, indeed, brought lawyers through deep waters, but has accomplished much in the great cause of bringing justice between man and man.

6. While there is much drudgery in this as in all work, it is not of the sort that wears a man out before his time. A lawyer's term of service is longer than that of many other men. If he has had successful experience, he will be able to give clear-headed advice beyond the years of many men's active work.

Women in the Law

Of more than 114,000 lawyers in the United States, it is estimated that over 1000 are women. Practically all the states admit women to the bar on examination, and those that do not must recognize the diplomas of those who have been accepted in other states. Certain law schools will not admit women students, but there are so many in the country that will do so that women have ample chance for preparation. But a woman lawyer has even a harder struggle than a man, and she should be sure that she has exceptional ability and courage before undertaking this profession. There are certain lines in which women lawyers may be of great value, especially in cases relating to children and women. Judge Ben Lindsey says that women's work is needed in court where the troubles of children are dealt with. In the *Good Housekeeping Magazine* for October, 1915, Dean Ashley, of the New York Uni-

versity Law School, to which women students are admitted, is reported as saying that he "finds no difference between men and women as to legal aptitude." So with this testimony as to opportunity and ability, there seems no reason why the woman who feels that she has it in her to succeed should not undertake the study of law. And now that women are being granted the right of suffrage, there will be more and more opportunity for women in public life and along with that a somewhat wider place in the practice of law. There is still a good deal of prejudice against women lawyers, although this is growing less and less every year.

MEDICINE

Robert Louis Stevenson said, "The physician is the flower of our civilization." After we have studied his achievements and possibilities, I think you will agree that this is, at least, often the case. All kinds of people go into this profession, from the disreputable quack to the man who combines the highest specialized training with the broadest altruism; but of the one who lives up to an ideal, we may say that Stevenson's estimate is true. Certain it is that the object of the profession is the service of humanity. We shall examine the characteristics that tend to qualify a man for this high type of medical work; but always we must remember that there is great variety in the many divisions of work to be considered here. One might go into general medicine, into surgery, research work, consultations, or specialties of countless sorts. What, then, are the qualifications that belong to the physician's work in general or to the various divisions?

Qualifications

1. The physician should have a studious mind. As in law, so here, one must study to keep up to date; and

perhaps it is even more important in medicine, as this science is making very rapid progress. If a man is not willing to study constantly, he would better not be a doctor. Here is one example of what this constant study may mean. A splendid young physician chose his office in a building apart from the other doctors so that he might spend his free moments in reading and study rather than be tempted to waste them in gossip. This was his reward. Another doctor's patient who had been at the point of death was recovering when very serious and baffling complications set in. The young doctor was called for consultation. In his recent study he had learned what none of the others knew, that a discovery of the cause and treatment of this very trouble had just been made; and by means of this knowledge he was able to save the man's life. Constantly discoveries are being made, and a wide awake doctor will not be a week or a day behind the times.

2. He should have high ideals. Most people do not care to trust their physical well being to a man who has not the highest standards of morals. The doctor is perhaps tempted more than most other men to use drugs and strong liquors; he can obtain these when others are prohibited, and the strain of his work makes him wish for the quieting and pleasing effects that come at first. But it is particularly necessary that he should not yield to this temptation, as he must constantly advise others against it and advice without example is weak. Again he is often tempted to make light of or at least not to condemn certain evils for the sake of getting more practice. His ideals should be strong enough to tide him over these times and to make him feel always that high standards are worth more than money.

3. He should have a pleasant, cheerful personality. Dr.

William Osler says, "The basis of the entire profession of medicine is faith in the doctor." Certain it is that if he cannot inspire confidence, all the scientific equipment of the physician will not much avail. The cheerful personality that comes partly from self-confidence is essential to this. Men are learning more and more the importance of mental influence, and many a patient has been brought to recovery by the sympathetic optimism of the doctor.

4. Skill in manipulation is also necessary. We think of this as being particularly useful to the surgeon and it is. He must be able to do the most delicate work carefully and quickly. So important is this that it is said that the expert surgeon's term of service is comparatively short; for it takes a period of years to develop the highest skill, and after a rather short term of years the hand begins to lose its steadiness and his efficiency begins to wane. But during his working period he is able to do such marvelous things that it is worth all that it costs. Besides this a certain skill of hand is needed by every physician. It is necessary in giving examination and in various kinds of treatment.

6. He must have courage. While knowledge and care can protect a doctor generally from contagious disease, he must still run a good deal of risk. The American Medical Society has laid down certain principles for its members, among which is the following: "When an epidemic prevails, a physician must continue his labors for the alleviation of suffering people, without regard to the risk to his own health or life or to financial return." You have probably read how bravely in the great war, the American doctors have faced death in the typhus camps in Europe; and how many sacrifices were made in the work of exterminating yellow fever during the building of the Panama Canal.

7. He should have health, a good store of it, to withstand the strain of hard work, hard hours, and exposure to all sorts of weather and to infection.

Preparation

The best medical schools now require at least two years of college work for entrance. The four year college course is recommended, but in that case, with proper choice of subjects the medical course may be completed in three years. Otherwise the medical course is four years and after that it is most desirable for the young doctor to have at least two years as an interne in a good hospital. But no matter what his training, before he has a license to practise, the physician must pass a rigid state examination. So unless a young man can afford to give about eight years after he graduates from high school, he cannot hope for the greatest success as a doctor. In preparation for his specific medical training, he should have thorough work in English, biology, chemistry, and physics, besides having had some Latin, German, and French. Not only must knowledge be gained but skill must be developed. The scientific training gives the power of accurate observation, and of classification of results; and it trains the hand to steady, delicate work.

In medicine perhaps more than in any other line it is important to choose the right school. Medical schools are ranked according to their teaching force, equipment, and standards, and a doctor's reputation depends a good deal upon the place of his preparation.

Hospital training is being more emphasized, physicians now spending from one to three or more years as hospital interne or as visiting surgeon. In Pennsylvania a doctor is required to have one year of hospital training before he is allowed to take the state examination for a license to

practise. After the hospital work is completed, a large proportion of the doctors prefer to go into specialized work. It is somewhat less of a strain physically and also it brings larger and quicker financial returns. But it requires not only special training, but also a few years' experience as general practitioner before narrowing one's work down to a particular line. In the last few years in this country there have grown up very many free dispensaries which furnish doctors the opportunity of much general experience in a short time. But, however it is managed, this profession requires a longer and harder preparation than does any other line of work.

The tendency of the medical profession is to put more and more emphasis upon the prevention of sickness, to educate the public in medical matters, and to influence sanitary commissions and sanitary legislation. For this reason a broad cultural training is essential. While this is preliminary to actual practice, as in other professions, the preparation is never ceasing. A physician should ally himself with medical societies, should read the medical journals, and should keep up in every way with the progress of his profession.

Opportunities and Disadvantages

Like that of law, the profession of medicine is overcrowded. For our population of 100,000,000, we have 151,132 doctors, making one for about every 661 people. If these were distributed evenly, and the number of general practitioners and specialists were proportioned to the population, there might still be too many, but this is not the case. A very important point for the young doctor is to select a locality where his services are needed.

In general the income of the physician is low, especially when compared with the capital that he must invest for

his education. Various figures are given for the income of the average American physician, varying from $660 to $900 a year. But this takes into account the most unsuccessful and those who have had very meager preparation. Taking it for granted that if you start out in this line you will get the best training, it might be fairer to look at the report made by Professor Emmons of the Harvard Medical School. In a table showing the average incomes of 253 Harvard Medical School graduates for thirteen years, we find $909 given at the end of the second year. By the end of the thirteenth year, the average annual income is $4680. This is much better, although it is nothing like the income of the very successful business man. According to these same statistics, it is even considerably less than that of the lawyer. For the expert specialist, there are occasionally very high fees, but we must balance with this the fact that a great deal of absolutely free work is done and the cost of the necessary instruments, drugs, and office equipment and other expenses is exceedingly high. In most cases the physician will find it very hard to collect a good deal of his money, and unless he has unusual business ability, he will probably run very short.

Another disadvantage from the financial point of view is that the more successful he is in his legitimate work, the fewer patients the physician will have. The tendency of the medical profession at present is to put the emphasis on the prevention of disease. If a doctor conscientiously works toward this end and succeeds in preventing sickness his work will be likely to decrease. On the other hand, some authorities think that as this new tendency gains more influence, people will be regularly examined and physicians will be paid for preventive as well as curative services. Perhaps part of the doctor's work will be to create a

sentiment for such examinations. In one of our largest state universities this idea has been put into practice. Students may go to the infirmary for free examination at any time, and they are greatly encouraged to go at the indication of the most insignificant symptom. This has already lessened illness in the university. The recent examination of young men for service in the army and navy has brought to light many beginnings of serious troubles that otherwise would probably not have been discovered until they had gone beyond the hope of cure. So that while this phase of the physician's duty may at first seem to cut down his source of income, it certainly opens up to him a wide field of usefulness.

A very trying and exasperating condition is the necessity of competing with fakes and quacks of all kinds. A reliable physician is often obliged to see others who are not playing the game fairly, win over him; and he is bound to stand by his honest, thorough-going course whatever it may mean to him.

If the difficulties of private practice seem too great to the really capable physician, he may turn to the many salaried positions that are open to him. He may be employed by a life-insurance company, a mining company, a railroad, by one of the numerous industrial concerns, or he may undertake a civil service or public health position. If in addition to his scientific ability he is a good organizer, he might do well in institutional work. All of these lines have the advantage of the fixed income.

But the one opportunity that to the high class doctor outweighs all the disadvantages is that he is in a position to give the highest kind of service to mankind. Sickness is a great drawback to progress, and countless numbers of our most useful citizens are cut off before their work is finished. In this country, 80 per cent. of the

deaths are from preventable causes. Wonderful progress has been made in medicine in the last thirty years; and to the open-minded, able, aggressive physician there is a chance to help in the fight. In this time, the horror of diphtheria, yellow fever, small pox, and typhoid has been much abated. Methods of avoiding and conquering the first intrusion of tuberculosis have been discovered. But there are still almost incurable deadly diseases to be overcome and some one by careful research work is going to discover the method. Even with the present knowledge, much suffering could be eliminated, if the public sentiment were aroused and the right legislation induced. The following statements by Irving Fisher, the economist, quoted from *The Profession of Medicine,* by Arthur B. Emmons, M.D., may help to emphasize this opportunity.

"The great preventable wastes in this world are, I believe, wastes which can be prevented only, or chiefly, by hygiene. Crime, vice, insanity, disease, death, and poverty could be wonderfully reduced by applying hygienic knowledge, even the little already available.

"The medical profession is, naturally, the body of men through whom this waste is to be checked. With the increased knowledge concerning hygiene and the rapidly increasing interest in it, the medical profession has an opportunity greater than ever before. Their art is being securely based today on exact science."

Another great field that is opening up is that of the orthopædic surgeon through whose skill many helpless, crippled children have had their backs and limbs straightened, so that they are now able to walk. Before the United States entered the war, there were in our country less than two hundred of these surgeons. Within a year there was an urgent call for seven hundred, and the need will doubtless grow. It was the orthopædic surgeons who made it

possible for such a large percentage of wounded soldiers to get back to the trenches, while many who could not get back were still made fit to live useful lives.

Weigh this opportunity with the fact that the average doctor does not make much money, and the pecuniary disadvantage almost disappears. There is no doubt that the doctor's reward is in general very slow in coming, and not exceedingly large when it does come, but the real reward comes from the interest and satisfaction in his work. To refer again to Dr. Emmons' pamphlet, which is a collection of letters from graduates of the Harvard Medical School, the testimony of these graduates agrees in that those who enter medicine for the sake of making money are seldom satisfied.

So if you are considering entering the profession of medicine, it is not any more necessary to consider the question of your fundamental qualifications than it is to ask yourself whether you have the patience and can obtain the necessary money for the long preparation, and whether you have the spirit to work hard and long because of your interest in the problem and in humanity without much thought of the financial returns.

Women in Medicine

There is a good field in this work for women and already there have been many remarkable women physicians. You may read of a good many of them in an article by Rose Young in the *Good Housekeeping Magazine* for August, 1915. One of the most interesting is Dr. Rosalie Slaughter Morton, of New York, who is a surgeon on the staff of a large hospital, and besides has organized and conducted a wide campaign for the purpose of increasing the public health.

It has been said that women have not the health, the

skill, the personality necessary for a physician, but of late years they have proved by the results of their work that this is not the case. It is true that women have had great difficulties in the matter of preparation and they have been compelled to go great distances and to be content with training short of the best. And even after making the effort and finishing the medical course, there have been very few hospitals that would take them as internes. However, these conditions are changing, the doors of the medical schools and the hospitals are opening more and more. In New York and in Chicago, woman is gaining a place in hospital work. But if she has the qualities and can get the preparation, what about her opportunities? It is needless to say that they are not so good as are those of her brother. There has been much prejudice against her both on the part of the men physicians and on the part of patients, both men and women. But this prejudice is fast growing less and less, and many women prefer the services of a woman for themselves and for their children. In almost all lines, women have the reputation of being less professional than men, and it is the women themselves who will have to prove that this accusation is not true.

Besides private practice, women doctors find good opportunities as school physicians, in child welfare work, in women's hospitals, in prisons, and other institutions. So that if a woman is especially interested in medicine or surgery, and has reason to think that she is qualified for the work, there is no cause why she should not start out and devote herself to it. If she really has the ability, she will probably make a good living, and more than this, she may find opportunity to do special work with women and children more successfully than the man physician.

NURSING

Nursing is an occupation in which there are many times more women than men. According to the Census Report of 1910, there were in the United States 82,327 nurses and of these 76,508 were women. We are sometimes inclined to think that this is entirely women's work, but the 5819 men engaged in it cannot be overlooked. There are cases that demand more physical strength than the average woman has, and many men prefer to have a man nurse. Especially is this true in institutions that are particularly for men, and in the case of men who must travel for their health and need a nurse companion. But ordinarily it is the woman who has the nurse's instinct and we are accustomed to think that this is her special field. It is hard work and should not be undertaken unless she is sure that it is her sphere, but once sure, she has a tremendously fascinating and inspiring field ahead of her.

The prospective nurse is confronted by a more definite set of qualifications than a beginner in most other fields. She must have splendid health before she can enter the hospital for training. Her work is hard and a nervous strain, but she has the advantage of knowing just how to conserve her strength and to take care of her health. Also, especially now that laws regulating the hours have been passed, her very training is conducive to health, and most girls leave the hospital in a better physical condition than that with which they entered. A nurse who has not her nerves under perfect control is very hard on her patients, but a nervous temperament may help her in that quick feeling and seeing what to do which is a valuable asset.

Her other qualities are on trial during her six months

of probation; for she is not really accepted until she has taken that time to show what she is. She must be tactful and patient and yet masterful, for sick people are very trying and unreasonable, and while they must not be irritated it takes a firm hand to give them the required care. The nurse should have the imagination to put herself in the patient's place and see his point of view, and at the same time should realize that not only has she been taught how to care for him, but that she is well and the patient sick, and so her judgment is probably better than his. To be able to adjust herself takes a fine poise which is partly natural, partly acquired by training, but the girl must be sure that she is willing to forget herself and her own feelings enough to learn it.

To enter the best hospitals for training one must have been graduated from high school, and be at least twenty, in some twenty-three, years of age. It pays to go to the best hospital because there one will observe the work of the highest grade surgeons and physicians, besides being associated with the best superintendents and nurses. The course generally takes three years, after which a nurse goes forth full fledged, and on her own responsibility. The usual hospital custom is that the nurse while in training gets her room and board, and a small amount of money for her books and incidental expenses.

After graduation, she may do private nursing for which she will receive about thirty dollars a week with room and board. It must be remembered, however, that when she is not "on a case," her pay stops, that she must of necessity take vacations without pay, and she may have to keep a room and pay rent for it all the time. On the other hand a good nurse is in demand and she is not likely to be obliged to have many idle weeks.

If she does not care for private nursing there are many

other positions that she may get. In the cities are visiting nurses who are called to homes where there is sickness, in order to show the other members of the family how to care for the patient, and to give suggestions as to diet, fresh air, and sanitary conditions. Nurses are employed by many large industrial concerns, and in every good sized town there is the school nurse. Public and private institutions have their nurses and here there is often the opportunity to work up to an executive position. Also many appointments in hospitals are given to graduate nurses. So perhaps here, more than in any other line, a capable girl may be sure of a good opportunity.

It would be trite to emphasize the satisfactions of her work aside from the financial reward; in very few places are there such good opportunities for serving and for seeing the results of one's service. For the girls who will earn their living only a few years before devoting themselves to homes of their own, this work is a most excellent preparation. They learn the first principles of a healthful diet, much about sanitation, not to mention their more specialized work of caring for the sick and injured. They learn to work quickly and quietly, to keep their poise in emergencies, and on many occasions to use what originality and inventiveness they may have. In times of catastrophe or in periods of war, the woman trained in nursing finds many opportunities for service and may be able to help vitally in the world's great need.

DENTISTRY

We have said that the professional people serve as helpers; and from our discussion so far we can see that they are not only helpers of individuals, but that all the fundamental industries are dependent on their services. Most

industrial concerns, railroads, and institutions have not only their own lawyers but also their own doctors and nurses. The dentist's services are given more on an individual basis, but we shall discuss his work next because it is really a specialized form of the profession of medicine, though involving slightly different qualifications, preparation, and opportunities. Again the report of the United States Census will show us how the number of dentists is increasing. In 1890 there were 17,498 dentists; in 1900, 29,683; and in 1910, 39,997. Plainly, it is becoming one of the big professions. In the early part of the nineteenth century, dentistry meant simply the extracting of teeth, just as in early times the physician was the barber and cured all diseases by bleeding the patient. Dentistry has made great progress since that time. As in medicine, there is much specializing. Besides the regular dentist who does the mechanical work of filling teeth, there is in the big cities the man who does nothing but extract teeth, the man who in his laboratory makes false teeth and plates, and the man who devotes his attention to treating mouth diseases, such as pyorrhea. Diseases of the teeth and mouth have been found to account for much suffering in all parts of the body; and the dentist is very often the one who discovers the trouble.

Qualifications

1. First of all the dentist must have mechanical skill, that is, he must be deft in using his hands. After all, the work of the dentist is largely mechanical. It seldom, like that of the physician, depends upon giving the right prescription, but rather upon doing a neat, careful, efficient piece of handiwork.

2. Along with this he should be somewhat inventive; for there will be unusual cases that would be baffling to

a man with no ingenuity. A successful young dentist came upon a puzzling condition in his work; he was inventive enough to figure a way out of the difficulty. When he had completed the task, he said to his patient, "Well, that was hard, but it is working out the hard problems that makes the easy things easy." This man had inventiveness, manual skill, and was headed in the right direction for unusual success.

3. He and his office must be immaculate. Many dentists, in order to emphasize this point, dress entirely in spotless white even to their shoes. His hands must be kept perfectly and all his instruments and surroundings absolutely clean, otherwise refined and particular people will not patronize him. And not only that; back of this appearance is the principle of antiseptic methods. Dentistry is in line with many other departments of work today in fighting bacteria which bring infection and much trouble.

4. He should have a certain amount of money to draw on when he begins; for a dentist's equipment is expensive. In fitting up his office, he must have an electrical machine, a dental chair, besides his instruments and other furniture. It is estimated that this will cost him about $500 or $1000 according to the standard which he must maintain. His success may depend a good deal upon the appearance of his office. One young man was fortunate in having a suite of rooms furnished and equipped for him by his father, and was thus able to get a good start in a larger city and more prosperous neighborhood than would otherwise have been possible.

Preparation

The dentist must have a three or four years' course in a dental school. These do not have such high entrance

requirements as do the medical schools. A high school education is expected, but a college course is not required. Chemistry, physics, and manual training taken in the high school would be a help. More and more a certain amount of medical work is required; but this instruction is usually given while in the dental school. Even now in obscure neighborhoods or among ignorant people, a purely mechanical dentist may make a living, but an ambitious man will want a good scientific training in order to keep up with the leaders of his profession.

Opportunities

There is no doubt that the work of the dentist is increasing. People are waking up to the necessity of caring for their teeth. The most careful people go to the dentist twice a year so that the trouble may be caught in time to save their teeth. Besides this doctors are sending their patients to the dentists, because they are continually finding troubles that are caused by the teeth. Practically every one visits the dentist sooner or later. Even those people who refuse to consult the regular physician on account of some opposing system or cult, have not yet rejected the dentist or found a substitute for him. In many places dentists are hired to examine all school children. And so while his work is increasing, it seems likely that it will increase for some time to come.

As to remuneration, it is said that within five years a dentist should be making $1200 a year. Of course this depends largely upon his choice of location. One young man who went to a town in the Canadian Northwest, where he had little competition, had in that length of time built up a practice of $10,000 a year.

The dentist has the advantage of numberless inventions that help him to perfect his work, so much so that some

people think that the limit of possibilities in that line has been reached. Whether or not this be so it looks as if the future development of the dentist would be more along the line of a more thorough scientific basis for his work. And in this way another disadvantage may be overcome. It must be confessed that in general a dentist has not quite the same standing as that enjoyed by the men in the other professions, a condition that is probably due to the fact that he is allowed to practise with less preparation. His status is already improving and is likely to become steadily better.

While the boy with mechanical ability might go into a trade, dentistry would appeal to the one who wanted to come into more personal contact with people. Along with medicine, it appeals to the desire to relieve human suffering while it escapes the disadvantage of irregular hours and being called out at night, and as one dentist said it does not bring the responsibility of life or death, a thing that some people are not willing to face.

As to the opportunities for women in this work, they are fairly promising. A woman would require the same qualities, preparation, and equipment as would a man. There are a great many women dentists who are doing successful work; but they must remember that it is necessary for them to keep a steady nerve and hand. Dentistry does not offer much of the specialized work particularly adapted to women. However, women seem usually more than men to be fitted for work with children, and more and more attention is being given to the teeth of children before they begin to "ache," in order to avoid real trouble later. In this line a good many women have specialized.

EXERCISES

1. What is the distinction between a professional and an amateur? What do we mean by saying that a certain occupation has become a profession? What do we mean by saying that certain people have a professional attitude toward their work, while others have not?

2. What do you understand by a "starvation period"?

3. Both doctors and lawyers have an opportunity either to do much to help the immigrants during their first years in this country, or to take unfair advantage of them. Explain how.

4. Mention ten circumstances in which a man might need a lawyer's advice.

5. What do you understand by "economic and social" conditions?

6. Explain why lawyers generally have large libraries.

7. What is the work of a patent attorney?

8. Write a theme on the following subject: "Why Lawyer Jones should have tried some other occupation."

9. Find out about the work of Dr. Wilfred Grenfell.

10. What is meant by research work? Where is that sort of work going on? What are some of the things that the doctors are trying to learn? What is vivisection? Give arguments for and against it.

11. Give instances in which doctors have shown the elements of heroism.

12. Make a list of medical schools. Find out about the requirement for entrance to any one of them. The requirements for graduation. What is its standing in the medical world?

13. Find out about the new military training schools for nurses.

14. Which do you think make better nurses, men or women? Why?

15. Send for the bulletins of five training schools for nurses. Compare the entrance requirements and the expense of training.

16. Describe a girl who you think would make an ideal nurse.

17. What materials that the dentist uses were hard to get after the war began?

18. Take one of the four professions; law, medicine, nursing, or dentistry, and discuss the qualities and preparation necessary in the boy or girl who plans to undertake it. Be specific as to the school to be attended, and the qualifications of one particular individual.

19. Explain how each one of the professions is useful in war time.

20. Is there any reason why a girl should not undertake any one of these?

REFERENCES FOR FURTHER READING

EMMONS, ARTHUR B. *The Profession of Medicine.* Harvard University Press, 1917

ALLEN, FREDERICK J. *The Law as a Vocation.* The Vocation Bureau of Boston, 1915.

Principles of Medical Ethics. American Medical Association Press, 1912.

MORELY, EDITH. *Women Workers in Seven Professions.*

LEWIS, WILLIAM DRAPER. *Great American Lawyers.*

Medical Education in the United States and Canada. Carnegie Foundation for the Advancement of Teaching.

CHAPTER VIII

THE PROFESSIONS

(Continued)

TEACHING

Another large professional field with which you are all familiar is that of teaching. In fact, in numbers, it is the largest of the professions. The Census Report shows 478,027 women and 121,210 men engaged in the work of teaching; and this is besides the 15,668 college professors. Teaching is gaining more and more of professional dignity, and we can see how it is very vitally necessary in every line. In each occupation we have discussed the necessity of preparation, and this depends upon teaching of some sort. While this instruction has in the past been given largely by older men in the business, more and more it is being taken into public schools, special schools, and the universities. A good teacher requires special abilities and training, and some of the best informed people are not able to impart their knowledge.

Qualifications

1. As in the other professions, an inclination towards study is essential. It is essential because a large part of the teacher's work consists in inspiring others to study, and to do this, he must have enthusiasm for it himself. Again, study is essential because in teaching, as in other lines of work in these days, there is continued progress. A

good teacher will be constantly reading and studying to keep pace with the advance that is being made all over the country. And third, this love of study is essential because perhaps the first requisite of a teacher is that he should know everything possible concerning the subject matter that he is to teach. He should have a far wider knowledge than merely that which he wishes to impart to his pupils. The day is past when the teacher can prepare in one evening what he intends to teach the next day. So consider this side of the question carefully before you decide that you will teach because teaching is a "snap" with short hours and little work.

2. In teaching one deals with people rather than with things and one must be able to get along easily with others, especially with children or young people. He must be interested enough in young people so that he will not be annoyed by the traits that are characteristic of youth. Without this interest no one has a right to teach; but perhaps you cannot test yourself for this until you yourself are older. If, however, you should decide to teach, and at any subsequent time find that you are losing sympathy with youth, you cannot change your profession too soon.

3. One must be able to impart knowledge to others. How often we hear the statement, "So and so knows his subject perfectly, but he does not know how to explain it or make it interesting." This power may be a natural gift and to a great extent it may be learned and cultivated.

4. There should be the power to control people reasonably; that is, to be what we ordinarily call a good disciplinarian. The teacher should be able to get people to do the right thing without the use of force. A fine young man who had all the other qualifications of a good

teacher, failed utterly because he could not make the boys in his class do what he told them to do. This is largely an inherent quality; but much is learned by experience.

5. It is of the utmost importance that a teacher live up to a high moral standard. Not only will the community demand this, but in his position his influence is so important that he will have to be willing to be even stricter with himself than he might otherwise deem necessary.

Preparation

The standard of the necessary preparation for a teacher is getting higher every year. Requirements differ, but in most states now the minimum is a high school and normal school training for the grade teacher, college training for the high school teacher and two or three years beyond that for the normal school or college teacher. For public school work, one must obtain a certificate according to the law of his particular state. In many states, this is secured by taking an examination, in others it is given on the basis of adequate preparation, but a certain amount of reading must be done in order to hold it from year to year.

There is much specializing in school work and that often means special training. There are teachers of domestic science, manual-training, drawing, music, physical training, and public speaking, and these should each have two or three years in his particular line. In the better high schools teachers usually have just one subject to teach, so that while in college, one should discover, if possible, his particular interest and should select as many courses as possible along that line. Besides this, all teachers must have a certain amount of work in the science, methods, and history of education.

If you intend to be a college professor, you will work

for three years after graduation on your specialty and get the degree of doctor of philosophy.

In addition to all this preliminary study a teacher must necessarily devote much time throughout his career to independent reading and study in order to keep up-to-date. He must read professional books recommended by his " reading-circle," as well as the educational periodicals. He must attend teachers' institutes and summer schools, and he should plan, if possible, to spend some period in study abroad.

Opportunities

The income of teachers is not large. In many states men are paid more than women because there are fewer of the desired type to be had. If a man is successful, he can be reasonably sure of getting a salary of $1500 or $1800 in a few years. A woman, on the other hand, will work much longer before she gets $1000, while positions that pay more than that are very few outside of the large cities. The states of California and New York furnish notable exceptions to this statement in regard to differences in salaries. In both cases, the state laws forbid discrimination in favor of men. If one has more executive ability, and becomes a principal or superintendent, he may get from $2000 to $5000 according to the size of the city where he works. A college professor usually begins as an instructor at about $1000 or $1200. His rise is slow, but as head of a department in a university he may get $3000 or $4000 or more. For this position he must be essentially a scholarly person. The highest paid positions are president of a university, superintendent of schools in a large city, state superintendent of schools, commissioner of education. A number of the states and large cities have provisions by which teachers who have served for twenty-

five or thirty years may receive a pension of $400 or more a year for the rest of their lives.

You can see that the average man teacher of ability gets a much smaller income than the business man. Frequently one hears a business man say: "I am sorry for Mr. S. How can he support his family on such a salary?" And Mr. S. is probably a college professor or a superintendent receiving a salary of from two to three thousand dollars. So according to the general point of view, a man must go into teaching from some motive other than that of making money. What other motives and what other rewards are there? If he is the intellectual type of man he has here the best possible chance of satisfying his inclinations. His daily duty consists largely of reading and study, the things that he likes most to do. And there can be no greater privilege than having one's duty and pleasure coincide.

Then there is the pleasure of being constantly in contact with children and young people. This keeps one young and alive and prevents him from getting sour.

But perhaps the greatest advantage is that of social service. The right kind of teacher is likely to influence for good many young people, and he also has the opportunity to help the community to higher standards. Ideals of education are constantly changing and the teacher may have his part in working out the best system for the coming generation. In this there is both the fascination of grappling with a big problem that is worth solving and the joy of feeling that your work is of some benefit to the country.

As to the room in this field, the following is quoted from the president of a normal school. "Good teachers are scarce. Men especially are wanted as principals and superintendents, as instructors in high schools in natural

science, mathematics, history, economics, and commercial branches, and especially to teach manual training and agriculture in our new agricultural high schools." The war has caused a scarcity of teachers so that for ten years or more there will be unusual openings. Inexperienced teachers have filled positions for which they would not have been accepted before this need came, while teachers who had retired have been urged to return to the work.

In this day of special education for almost every line of work, there is an increased demand for instructors. For one well trained in one of the occupations and gifted in the art of instruction, there is a great opportunity. When we consider the army and navy training schools, the schools of agriculture, of mining, and of commerce, the technical schools for the builder, the architect, and the engineer; the law, medical, and theological schools, not to mention library, physical culture, musical, and innumerable other courses, we see what a broad field there is for those who are interested in this side of an occupation.

A great disadvantage is that teaching is nervous work and more wearing than it would seem. Though the hours are seemingly short, the work is, nevertheless, hard and statistics show that many teachers break down under the strain of discipline. Again, a successful teacher will do a good deal of night work which, after a day in school, is hard. This side of teaching should be considered before one decides to undertake it.

The standard of teaching as a profession has unfortunately been lowered to some extent by men who have gone into it as a stepping stone to some other profession or because they considered it an easy task. But the standard is rising every year, and the realization of the importance of making teaching a high grade profession is an incentive to many first class men. The necessity for schools must

increase as our country grows. A teacher has the satisfaction of feeling that he is engaged in a vital, growing occupation.

As to the women, we have already spoken of the number who go into this work. They will always be needed, especially in teaching the younger children. Many women of executive ability become principals especially of the grade schools. In the larger cities there is a tendency to have a woman dean for the girls in each high school. One field for women teachers is rapidly growing — the work in domestic arts and science. Besides the mere teaching there is here much allied work. For instance, after we entered the world war, the domestic science teachers in the state universities, in the normal schools, and in the high schools, were called upon to help in the great problems of food conservation. That special work leads into many avenues of usefulness. Then there are college positions of an advisory and executive sort for women of ability. Many women also are engaged in private teaching of one sort or another. On the whole, there is scarcely any work for women in which the surroundings are pleasanter, or which demands higher pay.

JOURNALISM

We shall consider, in this division, journalism, and allied professions, the daily newspaper, magazine writing, and the authorship of books. The development in these lines has kept pace with that of other occupations in modern times. A newspaper establishment has all the elements of a great manufacturing plant; there is the commercial department with its business manager, salesmen, and office force; there is the mechanical side with its compositors, its machine operators, its stereotypers, its pressmen,

machinists, foremen, and superintendent; and lastly there is the editorial department. The printing side belongs to the manufacturing groups, the business side to the commercial group, but the editorial department does work that is particularly professional. When we consider that the success of many enterprises depends upon the attitude of the newspapers, that many occupations have their own trade magazines, and that a large part of instruction must come from books, we see how important journalism and writing are to our fundamental industries.

There is at the head of the organization of any newspaper the editor-in-chief and under him, editorial writers, the managing editor, the city editor, the night city editor, the telegraph editor, besides many special editors for the sporting, dramatic, society news. Besides these, there are a great number of reporters, correspondents, and copy-readers. This does not include all the people engaged in the newspaper business, but it may give you some idea of the immensity of it.

Qualifications

1. One should have the ability to write, to express what he sees and hears in words so that it will be clear and interesting to others. While training and practice help much in the form and ease with which one writes, there is a great difference in natural ability. The boy or girl who has great difficulty in expressing his thoughts, who hates to write and can never find the right word, probably has not this native ability, and any amount of interest in the excitement of newspaper work will not make up for the lack.

2. He should be a quick thinker and quick in his movements. Very shortly after the reporter finds his news, he must have his report or "story" ready to be pre-

pared for the press. There is no time for laborious planning or slow work. After it leaves his hands, the editor and the copy-reader must be just as quick. It is necessary to see at a glance just what corrections should be made, what should be omitted, changed, or emphasized. Sometimes important news for the morning paper comes in at about midnight, and then there is a masterful rushing of operations, in which there is room only for the quickest worker. In writing for magazines and books, this quality is not so important.

3. Along with quickness there is need for absolute accuracy. This is a trait that may be cultivated if you are interested enough to feel its importance. The reporter's work should be free from mistakes in spelling, punctuation, and grammar, but the copy-reader must be ready to correct any errors that the writer has made, and the proof reader to see all slips made in the printing. Then the reporter must be accurate in his stories, as they are called. He may make serious trouble by getting some one's initials wrong, or by mistaking dates, or figures. His superiors are not likely to have long continued patience with inaccuracies. This may not seem so necessary when you consider the exaggerations often found in papers, but it is demanded of the reporter that he state facts. Embellishments sometimes come later.

4. One who is in the reporting side of the business must be able to meet people tactfully. He is obliged to talk with people of all positions and of all dispositions. His object is to gain information from these people, and he must be able to approach them so as not to antagonize them, and to ask questions that will elicit the facts that he is after, no matter how confused or uninterested the person is.

5. The journalist must be courageous. We shall dis-

cuss later how he often is tempted to cater to business or individual interests to the detriment of the community and how such adjustments require a man of good judgment and courage. This matter lies largely with the editors, although the reporter has some minor questions to decide.

Preparation

We are finding out that almost every line of business is demanding trained men. In just recent years this has been true of journalism. In most universities, courses are now given in newspaper writing and editing. The technical marks for proof reading and the regulation form for the reporter's story must be learned. After the technical form has been mastered, even gifted writers need much practice in order to bring their style to its best. The help of experienced teachers in giving corrections and suggestions is most valuable.

Then besides the special journalistic courses, the broader the education that a man has the better the work that he will do. Journalism is becoming a profession and those who go into it would do well to have a college education.

Students sometimes earn their way through college by reporting, and the rapidity with which their class work in composition improves, shows what a large part practice has in training. There is likely to be a constant improvement in the literary style of one who is doing much writing. Newspaper work gives training particularly in writing that is clear-cut, brief, and to the point. Magazine work calls for writing of a more finished sort, but in all writing for publication improvement comes through practice.

Many eminent writers have recommended reading much from the works of standard authors so as to become accus-

tomed to good style and thus influence one's own manner of writing.

Opportunities

Journalism is a growing business. Every one reads the newspapers. The daily editions of many are in the hundred thousands. That means that in every city and town there is newspaper work for many people. Reporters, after they become established, are paid well. They usually begin by getting so much a column for acceptable copy. The better pay comes when they are accepted on the staff and work for a salary. Good men may be sent to all parts of the world to write up important occurrences. Richard Harding Davis, George Kennan, and John McCutcheon have made reputations in this way, but practically all great newspaper men began as "cub" reporters, and young men who have the necessary qualities and energy are likely to succeed.

Newspapers have the opportunity of exerting a tremendous influence on the community. This is no longer accomplished through long preaching editorials, for the day of the personal editor is past. To be sure, every paper has its editorial page, and there the attitude of the paper is briefly shown. But readers do not spend much time on this page, and the bulk of the paper is taken up with news. Nowadays a paper exerts its influence by simply reporting facts. The newspaper really belongs to the people. It is an important means of their education. It tells people what is happening politically, industrially, and socially and enables them to form their own opinions regarding public affairs, especially in the matter of elections. If the facts are not reported accurately and without bias the reader does not have a chance to learn what is happening and to make his own decisions.

There frequently arise moral reasons why the news should be reported accurately, and sometimes a paper is tempted to fall below its responsibility and fails to report accurately events that reflect unfavorably on certain individuals or business houses. An honest newspaper not only reports such conditions but suggests public action to combat illegal or vicious conditions.

The standards that a newspaper sets for itself are determined in many ways. There are questions of the sort of news reported, the sort of things advertised, the attitude taken on public questions that are to be decided by popular vote, by state legislatures, by city councils. All of these points suggest the possibilities for public service that newspaper work offers.

We have spoken particularly of the daily paper, though what has been said is pretty generally true of magazine writing also. Here the work must be a little more finished in style and complete in substance. It takes real talent to succeed, and it is hard to get a start, but when one has once made a name for himself, his struggling period is over.

As for women, there are many of them in this sort of work. They are as likely to have the talent for writing as are men, and in many departments of newspaper work we find women reporters. A big daily paper with its rush methods seems to be a man's sphere, but even here, you will see many departments under the direction of women. They may be responsible for the society news, theatrical, music, and art reports, book reviews, and even occasionally correspondence concerning vital national situations. Magazine writing is open to women as much as to men. They have merely to prove their talent. Miss Rose Young, who has held some of the best positions in the newspaper world, gives us the following points about

Courtesy National Cash Register Company

These girls are enjoying the benefits of the welfare department in a large industry

Courtesy Sears, Roebuck and Company

Recreation room in a large mail order house. This shows one sort of welfare work.

opportunities for women in this line. It takes a good deal of effort and pushing for women to get a start, and in starting they get less money than men. For instance, a man "cub" reporter gets about twenty dollars a week, while a woman gets about seventeen. But there may be chances for her to work into better positions. The average woman reporter may get $30 a week; if she becomes editor of the women's news department she will be paid from $35 to $60. Miss Young tells of one woman with a responsible position who received $125 a week, but this, like many other positions at the top, was exceptional. She feels that there is a place in editorial work for women in that they can get the women's point of view better than men, and that as women's interests are growing, women's newspaper work is bound to grow.

SOCIAL SERVICE

Under social service we include the distinctly religious leaders in the churches and synagogues, Young Men's and Young Women's Christian Association workers, as well as those who are engaged in what is technically called social service. It is surprising to learn how many activities are covered under this last group. It includes superintendents, officers, directors, and investigators of recreation parks, juvenile courts, social settlements, organized charity, special work for unfortunate children, prison and housing reform, public health and sanitation, immigration problems, and other industrial questions. You can see the reason for including all of these in one group. All those who are interested in going into any work of this kind are probably influenced by the same motive; namely, the desire to do something positive to help make conditions in this world better; the determination to put their

energies in a place where help is most needed. It is taken for granted that these are the reasons for going into social work, and therefore, perhaps unconsciously, the public expects high standards of conduct and character in those engaged in it.

Qualifications

1. Some of the qualifications can be seen immediately. This sort of work is not carried on for the sake of making money. There has been an effort made to pay adequate salaries, and those who give all of their time to it may be reasonably certain of supporting themselves and their families, but they cannot hope for much besides this. So unless you are sufficiently interested in it to work for a moderate salary, this is not the work for you.

2. There should be a willingness to forget yourself and your comfort in a great many ways. Certain phases of this work would involve living in undesirable neighborhoods; or working with people who are not particularly congenial; or, in times of an emergency, giving your time and strength when it is very difficult to do so. For example, a young woman, who had been accustomed to every comfort and had had every advantage, undertook the investigation of laundry conditions in a big city. In order to do this, she went as a worker in a laundry, where she had to stand all day in a steaming hot room, and went home every night worn out and with wet, swollen feet. From her investigations she learned many things about the conditions of working girls, and through her influence laws were passed so that never again will the working conditions in this trade be so difficult. Not that this method must always be used, but it is illustrative of the fact that social betterment is often accomplished through the self-sacrificing devotion of the worker.

3. The third quality may naturally be inferred from the second, for self-forgetfulness leads to courage. Indeed, Donald Hankey felt that in the great war it was the very secret of bravery. This is perhaps the most essential quality of all. Much of social service work consists in investigating conditions and then in influencing legislation to better them. Until the whole world learns, as it is gradually learning, that it is really profitable for the big business interests to have decent living conditions for its employees, such enterprise will take a good deal of courage in working for what seems right. And the matter of legislation, although it gets at fundamentals, is only a part of this work. There are countless problems coming up every day, in all lines that require courage and self-reliance.

4. There must be a willingness to take responsibilities. If you are a follower and want always to be told exactly what to do and how to do it, you would better not undertake this sort of work. Social service workers are essentially leaders.

There are many qualities which are desirable in particular branches of this work; but if you have those already mentioned and are eager to undertake it, you can in the course of your preparation, pick out the particular line for which you are fitted.

Preparation

For all of this work it is better to have a whole or at least a part of a college course. For most ministers this is expected before they begin their special training. As these requirements differ in the various sects, it would be well to investigate for yourself if you are interested. In one way it differs from the long preparation for law or medicine; one can usually begin his work before finishing

his course and thus does not need so much capital ahead. But you can probably see for yourself that in the entire field of social work a very broad point of view would be necessary. For this reason a broad foundation is desirable and if one can afford it, a full college course is not too much. The Christian Associations have special courses for their secretaries. Schools are being established for training in social work. For entrance to these schools, students are supposed to be mature, and to have the general education of a college graduate. These schools are situated in New York, in Boston, in Philadelphia, in Chicago, and in St. Louis. Many universities now give courses for social service work, and by selecting the right work in college, you might be ready to start in at your graduation. In a large city like New York or Chicago, it is desirable to have the ability to speak a foreign language, especially would Bohemian or some of the languages of Southern Europe be valuable.

Opportunities

In general it may be said that there is a very wide opportunity in this line of work, for both men and women, all over the country. In *The Field of Social Service,* by Philip Davis, there is in the supplement a discussion of about forty-five types of positions of this sort. As to salaries they range all the way from $500 a year up to $5000. The average seems to run from $1000 to $3000.

A good many industrial concerns are employing men or women for what is called social service. The person in charge looks out for the welfare of the employees of the establishment. This may mean organizing clubs, advising in the matter of health, amusements, education, or helping in any way that may be necessary. Salaries are generally higher than those in other social work.

But here again, as in teaching and, in general, in most professions, financial remuneration is not the chief thing sought. In spite of the discouragements, in spite of the criticism of influential people, in spite of being sometimes misunderstood by the very people you are trying to help, and living with smaller income and fewer comforts than might come in other work, there is here an opportunity for the very deepest and most lasting sort of happiness, that which comes from giving and forgetting oneself for the sake of others. But we do not mean to imply that those who go into other occupations go with a selfish motive. One may feel that he is particularly fitted for some entirely different line of work, and he may there become a man of such influence that there will be no limit to the good he can do. But if you feel interested in social service and after counting the cost are willing to undertake it, you may be sure of a lasting satisfaction in your work.

After you have decided whether your interest and natural abilities lie in this work, there is ample opportunity for trying out in a practical way. In the larger towns and cities, there are almost always social settlements, where they are likely to need helpers in looking after girls' clubs, boys' clubs, and libraries, or in teaching various sorts of classes. College students often do this sort of thing in vacations. Then there are boys' and girls' summer camps and vacation schools that need volunteer help. You may be able to help the probation officer or the Woman's Club or the Red Cross work in your town. Many churches do this kind of work and would give you a chance to help or you might do something with the Boy Scouts or Campfire Girls or Young Men's Christian Association. If you will keep your eyes open you will find many chances to volunteer for unpaid work and in this way you

can tell whether it is really the sort of work you are best fitted to undertake.

Here for a third time we come to a line of work in which there are more women than men. The census report of 1910 shows a majority of about a thousand. Often women doctors and nurses use their professional training in this way. There are many women probation officers, truant officers, settlement workers. Efficient women are greatly needed in Young Women's Christian Association work. Competent women are being recruited from the ranks of teachers, librarians, and other lines, and given responsible work, even without special training, because there is such a dearth of workers. For educational and welfare work in the big stores and industrial plants, many women are employed.

THE LIBRARY

Men and women both find a field here, although there are perhaps more women, especially as assistants. Public libraries have come to be a most necessary and usual thing in this country, and we find all types from the small library composed of a few books collected by some public spirited person and presented to a small town, to the Congressional Library in Washington. Indeed they have become so general, that many people of the class who used to own large libraries, do not now buy many books, but depend almost entirely upon the public libraries for their reading matter. There is no question, then, that this is a growing field, and after we have studied it, we shall see why it may be classed as a profession. Many of the great industries have their libraries, and the professions are all dependent upon the librarian.

Courtesy National Cash Register Company

Field Day at the club. Another phase of welfare work.

Courtesy National Cash Register Company

Showing an opportunity for a librarian in a large manufacturing concern

Qualifications

1. First of all a librarian is business-like. The head librarian will have much responsibility in buying books and other equipment, and should be able to do this to the best advantage. He must have the ability to keep things right up to date, else he will be hopelessly swamped. In short the head of the library, just as the head of any other institution, is its executive and should be able to run it in a smooth, business-like, up-to-date way.

2. He should be accurate and systematic. There is in a library an endless amount of detailed, methodical work, and one who is impatient about giving attention to small points should find his work in some other place. Along this line, there is a good deal of mechanical work which must be carefully done. Books must be stamped, the leaves cut, labels pasted in, and often books must be mended. Making out catalogue cards and accession lists is also careful detailed work. One must exercise judgment in classifying books under the appropriate heads.

3. The librarian should be a person of culture and scholarship. He is something like a clerk showing his goods. The broader the education of the librarian, the better he will be able to help the patrons of the library. For instance, when the book called for is not in, he may be able to suggest a substitute. There are many other ways in which scholarship and culture are a help.

4. He should have a gracious manner. It often takes a goodly amount of self-control and patience to treat graciously and courteously a continuous stream of all sorts of people, all day long, day after day. The library belongs to the people and even though they should be unreasonable, they must be made to feel comfortable and to enjoy coming to their books.

5. A certain amount of discipline is necessary in every library; but this discipline must be exercised in an extremely tactful way. It is the librarian's duty to see that the reading-room is so quiet as not to disturb those who are using it. Also, he must be strict in regard to the rules for returning books and for keeping them in good condition.

6. The librarian must be quick in his movements. He should study to eliminate unnecessary motions; the line of people waiting to return and get books must be attended to in the shortest possible time.

7. The children's room demands a person with still other characteristics. She, for this is usually a woman, must have a broad sympathy with children. She will probably have a story hour and so she must be able to interest children. At other times, the children must be kept reasonably quiet and yet must be taught to enjoy the library.

Preparation

Formerly it was customary for a girl to receive her training in library work by serving a sort of apprenticeship at some library; but that day is almost past and one so trained finds himself very much handicapped. Indeed, one librarian who had learned in that way and had held a good position for a number of years, lost her position because as the library grew, problems came up which on account of her lack of training she was not able to handle. The only safe and sure way is to take training in a library school. This would take two or three years, and then there should be at least one year of practice in an actual library. After this a capable person is pretty sure of a good position. As we said, the librarian should have a certain amount of culture and scholarship; and therefore a college education is a splendid thing. A knowledge

of other languages is important, as there will be many foreign books on the shelves. In the library school one learns how to order, classify, and catalogue books. Some very efficient systems of classifying books have been developed. Besides this there are, of course, many other details to be learned. Probably the best known library school in the country is in Albany, N. Y. Then many of the universities have library schools. In order to continue one's education so as to keep up with new methods, there are library magazines and national and local associations for librarians, in which new methods and problems are discussed.

Opportunities

In a small library the librarian has all the work to do himself; while the man in charge of the largest libraries is an executive with many assistants. One usually begins as an assistant in a medium sized library. There are many sorts of libraries: the public library, the public school library, the university library, the special law, art, science library, the library in the industrial plant, and many others.

Many librarians complain that their work is monotonous, and this is undoubtedly due to the endless detail and business routine that we have mentioned; yet when one has this under control there are many compensations. The librarian is in an unusual position for helping, and there is always great satisfaction in this. All sorts of people come to the public library, the studious who understand and love books, as well as the indifferent person who finds the reading room a comfortable place in which to idle away his time. Gradually the library should cultivate a taste for good reading in the community. Andrew Carnegie says that every business man should cultivate a

taste for reading, both in order to have a means for relaxing in his leisure hours, and to be able to learn more about his particular business.

This is a profession in which men and women have an equal opportunity. In the universities many students earn their tuition by working in the library. In this way they learn many of the fundamental principles, and have a chance to discover whether this sort of work appeals to them. One young woman who began in this way, found that she loved the work and, after a course in Albany, has distinguished herself and now holds a responsible position in the public library of one of our largest cities. Another young woman specializes in cataloguing and is sent for by the largest libraries all over the country whenever there is special cataloguing to do. There are all sorts of opportunities and while it may not have the spice of some kinds of work, there are countless delightful things about it.

EXERCISES

1. Is there danger in a teacher being so devoted to books that he loses interest in his pupils?

2. In many states men get a higher salary than women for doing the same work. Why is this? Is it just? What economic law does it illustrate?

3. Why do young men just out of college often choose teaching when they do not intend to make it their life work?

4. Is the difference between the minimum and maximum in teachers' salaries in the same proportion as in other lines of work? What effect does this have on young men especially?

5. Will women ever receive the same remuneration as men in this profession? If so what cause will bring this about? If not, why?

6. The secondary schools and colleges especially need men and women of fine moral calibre. Why is this true?

7. What is the danger of having too many women and too few men teachers in the secondary schools?

8. In the last years the demand for special teachers has changed. Can you tell in what way? What causes this change?

9. What dictates the policy of a newspaper? Does the editor have anything to say about it?

10. May a newspaper writer wait for "inspiration"?

11. A paper is often sued for libel. Explain how this may happen.

12. A reporter must have persistence. Under what circumstances?

13. Does the art of scenario writing differ from magazine writing? If so, in what respect? What are some qualities especially necessary for those who write scenarios?

14. Is a position on a newspaper good training for one who aspires to write for the magazines? Give your reasons.

15. Is there danger of a person being too sympathetic to make a good social worker?

16. Can you tell how conditions have been improved in any line during the last few years through publicity?

17. Why is the field of social work more popular with women than with men?

18. Mention some men and women who are well known for work of this sort. Choose one and tell about his work.

19. Is there danger of depending too much on the public libraries and having no library of your own? Why should every person have at least a small library of his own?

20. Some libraries have women to cut out, mount, and classify pictures from magazines, and papers. How may these be used?

21. Mention a well known man who has built and equipped many libraries. What plan did he use? How many has he built?

22. Of the four: teaching, library work, journalism, and social service work, which do you think is the most helpful to society? Which causes the greatest nervous strain? Which would take the longest preparation? Which would bring one in contact with the most interesting people? Which would you enjoy the most? Why?

REFERENCES FOR FURTHER READING

DEVINE, EDWARD T. *Positions in Social Work.* New York School of Philanthropy, 1912.

BLEYER, W. G. *Newspaper Writing and Editing.* Houghton Mifflin Co., 1913.

Social Work. (Pamphlet). Russell Sage Foundation.

WARD, EDWARD J. *The Social Center.* D. Appleton & Co., 1913.

BARDEEN, C. W. *Teaching as a Business.* C. W. Bardeen. 1897.
BOSTWICK, A. L. *The American Public Library.* D. Appleton & Co., 1910.
GIVEN, J. L. *The Making of a Newspaper.* Henry Holt & Co.
DAVIS, PHILIP. *The Field of Social Service.*

CHAPTER IX

THE PROFESSIONS

(Continued)

ENGINEERING

Engineering is the "Mecca" of a great many boys who do not know into what other field they would fit and who think perhaps they would find success here. But engineering is a very broad field, and if a boy has no more definite idea than this, he is not very clear as to his own desire. However, there is a great overlapping of occupations and the qualities and preparation of the engineer may be very much the same as those of the head of a large manufacturing or building enterprise. Indeed, many men have changed from one to the other. For example, take Captain W. R. Jones, who was for many years general superintendent of the Carnegie steel mills. He had all the qualities of a great manufacturer, but he was also a great engineer, was a member of the American Institute of Mining Engineers and of the American Society of Mechanical Engineers. The engineer is absolutely necessary in the manufacturing plant. He is needed in designing the plant, in planning and constructing the machinery, and in perfecting and developing improvements of all sorts. But we take up this occupation separately because, while it is connected with other occupations, it is a great profession by itself. Like the other professions, it requires a long preparation; and considering the capital invested in getting ready for it, the money returns

may be very small; but, like the other professions, it gives the compensating satisfaction that one is engaged in a work that may be a great benefit to his fellow man. The government employs many engineers. It is the engineer who plans and carries out irrigation projects, and who is needed at many turns by the farmer. The railroads could neither be built nor maintained without him. Altogether, perhaps more than that of any other profession, we can see that his work is indispensable to the great industries.

Engineering may be in any of the following fields:

1. Civil engineering. This deals with surveying, laying out roads, and building bridges.

2. Mechanical engineering. This deals with power, machinery, and the handling of engines.

3. Electrical engineering. This deals with all the possible applications of electricity and is a very broad field in itself. It may be telephone engineering, dynamo engineering, electrical design.

4. Chemical engineering. This deals with the science of chemistry in modern industry. Nearly every large manufacturing establishment has its chemists to determine the quality of its purchased material or output, or to investigate the possibility of saving. For instance, the steel business analyzes the coal, coke and steel; the soap business the composition of fats and soap; the dairy business, the quality of milk, cream, and butter.

5. Sanitary engineering. This deals with such work as the laying out of sewers and water mains.

6. Railroad engineering. This is concerned with the laying out of railroads, building stations and bridges.

7. Mining engineering. This has to do with the problems of mines; such as, assaying, drainage.

8. Besides these, we should perhaps mention naval, marine and aeronautic engineering.

Courtesy National Cash Register Company

"Jacob Ritty got the idea of the cash register while studying a device in the engine room of an ocean liner"

It is not so very many years since the term "engineer" referred exclusively to the "civil engineer," and he was simply a surveyor in a very narrow sense, concerned chiefly in marking out boundaries for the farmer. The remarkable advance in the last forty years has created the demand for all these technically trained engineers. During this time there have come into use gas engines, steam turbines, dynamos, telephones, phonographs, electric lamps, trolley cars, automobiles, airplanes, and wireless telegraphy. So we see that engineering is a new and very wide profession.

Qualifications

What kind of boy, then, might well consider going into this type of work?

1. Probably the most important quality is skill in mathematics. The ability to handle problems in algebra, geometry and calculus is the foundation of all engineering work. In order to get a glimpse of the extent to which mathematics is used, you have only to go to a library and look over two or three of the engineering magazines. You will see formulae and calculations on every page. Or look over the catalogue of some engineering school to see how much mathematics is required. If you cannot handle mathematics or it is distasteful to you, you would better go into some other line of work.

2. He should have some inventive ability, not necessarily the genius for great inventions, but the power of seeing something beyond the way things are working now. Look again in the engineering magazines and see how the work of invention is going on. You will find plans for counteracting the effects of heat and cold on machinery, devices for repairs, new conveniences for modern buildings, or means for transporting material from

mines. It all reads like a fascinating fairy tale, but we understand that the prospective engineer must be ready to add his skill and brains to the creation of these wonders.

3. There should be some skill in mechanical drawing and general ability in using one's hands. Indeed, engineering differs from most of the professions in dealing with things rather than with people.

4. It is difficult to imagine a good engineer who has not a love for and understanding of machinery. Perhaps this estimate of a distinguished engineer by another in his profession will help to show the type of mind that is likely to succeed. "He had exceptional mechanical judgment; he saw the simplest way to a desired end, discarding unerringly all superfluous material and movements."

Preparation

But in these days the natural ability is not enough. An engineer tells about two young men with inventive minds, who brought to his office two sample motors which they had made and of which they were very proud. The motors worked well and showed inventive genius but much better ones were on the market, which showed that on account of a lack of technical education, the young men had accomplished nothing. Their work was a failure, not because of a lack of ability, but because they had not learned what had been done in that line.

As to the actual preparation, it would be foolish for a young man to undertake any line of engineering without the training of a technical school. To enter this, he must have had the four years high school course. The technical course takes four years. But of late, the schools have been urging that five or six years be spent in training after the high school course. The extra year or two

are spent in a broad education as a foundation for the specialized training. We have the opinion of a number of eminent engineers that it is desirable to know something of language, of political science, history, and literature, so that the engineer may be ready to hold his own as he comes into contact with other educated men. The competition is so great that one who would succeed has need of the best possible preparation. Almost all the large universities have technical schools of various kinds, and there are several schools exclusively technical, such as the Massachusetts Institute of Technology and the Armour Institute of Chicago.

Opportunities

The fact that millions of dollars are spent for engineering works shows the bigness of this occupation. The Panama Canal, the Roosevelt dam in Arizona, the great dam at Lockport, Ill., gigantic buildings and strong railroad bridges, all impress us with the wonders of the achievements of our engineers. And yet those who know the most about these things tell us that marvels have only just begun. Much of the advance is due to the training of the technical schools which prepare many young men to help in the progress that before was left to a few geniuses. Now the practical engineers say that more scientific research work is needed, particularly work that is done by advanced students and professors in the laboratories. It is in this way that inventions and improvements are developed. The geniuses who get the first visions of the beginnings of things are few; and in this age not much would be accomplished were it not for the trained army with some degree of inventiveness and ingenuity who are able to follow up those of rare visions. The inspiration comes from considering the great amount

of work still to be done. Consider the field of applied electricity; the possibilities of what may come are amazing. If war still continues to be a necessary part of our civilization, the engineer has a great opportunity in devising schemes for our national defense.

As to the opportunities financially, it is said that the profession is overcrowded, which of necessity brings the incomes down. This is perhaps due to the fact that great numbers of high school boys have been attracted to this field, because they enjoyed driving an auto or playing with an electrical battery. But as in the other occupations there is room for the man who is really adapted to and prepared for this work. On the average, the financial returns are not great. After his graduation, a young man would be likely to start rather humbly as an employee of some corporation, of a great engineering work, a city or of a railroad. Here he would have severe training, but if successful, this would probably not last more than two or three years. For those who have come through these years of training and discipline the way looks bright, even though it is not the way to immense fortune. Statistics show that over 95 per cent. of the graduates of the technical schools are earning a good livelihood, live in good surroundings, and that many are prominent men in their communities. After a man has proved his ability and judgment, he is in line for a responsible position. The civil service examinations open the way to attractive work. There are positions in the Panama Canal Service, in the army and navy, and in aviation, in the work in forestry and mining. Many of the best engineers are employed by railroads or corporations at large salaries, or a man may go into business for himself as a consulting engineer.

It would not be wise to start in this occupation with-

out considering the dangerous side of it. From the bottom to the top of the ladder, in experimenting, in inspecting boilers, the engineer must often be exposed to accidents. He accepts this as the doctor, the soldier, and others accept similar risks. As an example of this, take William R. Jones, consulting engineer for all the Carnegie companies, a man at the head of his profession, who was receiving a salary of fifty thousand dollars a year. This man, while inspecting a boiler that was out of order, was killed by an explosion. Like a captain of a ship, he had stood by his men in what he knew to be a dangerous situation. On the other hand we should remember that because of care and the new inventions for safety, these things are happening less and less frequently.

When we think of distinguished men in this line the name of Edison is likely to come to us first of all. On the 11th of February, 1917, this man's birthday was celebrated by engineers and inventors all over the country. It was said that we now have three birthdays in February to remember, those of Washington, of Lincoln, and of Edison. What higher honour could be given to the work of an engineer?

Another great engineer was Bessemer, who had unusual mechanical genius, and a decidedly inventive mind. He was especially interested in iron and steel works, read and studied thoroughly until he knew everything that had been done in that line, invented improvement after improvement, and finally developed the famous Bessemer process of making steel.

The lives of distinguished engineers and their work read like the most interesting novels. In the magazine, *Engineering News,* sketches of the lives of the presidents of the various societies of engineers are frequently given. In a recent number we are told of the marvelous work

of the civil engineer, Geo. H. Pegram, in the construction of the New York transit lines. This was a very complex and dangerous undertaking. During the work, the traffic had to be carried on and yet there was no serious accident. In the exact words of the writer, it took the "highest order of engineering skill and sleepless vigilance."

In the *American Boy,* for March, 1917, there is an account of John J. Carty, Chief Engineer of the American Telephone and Telegraph Company. It is due largely to him that the telephone service reaches from New York to San Francisco and that it is possible to talk by wireless across the sea. The following is what he says are the possibilities for young men: "My conception of the telephone business — and I know that it is the conception of the highest authorities we have — is that our work will not even nominally be accomplished until we have obtained this result: That any man in the United States, wherever he may be located, may within a reasonable time, be connected with any other man in the United States, and talk to him successfully. That is a very large order. Just contemplate for a moment the magnitude of a plant of that sort. There is no plant of the character in the universe. It is not like a great steel works, where the factory can be viewed at once, where the plant can be examined, but the property, the wires, the interests, the methods and the men permeate into every jurisdiction in the United States. . . . There is no problem approaching that in complexity, whether viewed from the standpoint of the political economist, from the legal standpoint, from the financial standpoint, from the standpoint of the engineer, or from the commercial standpoint.

"Let us consider the future from just one standpoint: this plant, which I have outlined and which will be built,

must be reconstructed periodically. What a stupendous thing that is!

"This magnificent plant must be kept in order all of the time. It must be reconstructed; it must be kept up to date; it must be improved. Now that means that there is going to be work in this business, profession, or industry, whichever you want to call it, for the highest grade of men that exists."

We might multiply examples, but they all go to show that there is likely to be plenty of work for the engineer, work full of interest, fascination, and inspiration. These are the great leaders, but, as they themselves say, the work in these days is not done by individuals. Every invention and improvement requires co-operation so that there is room for all really capable men.

THE CHEMIST

The work of the chemist reaches into many fields and contributes to the success of many industries. Every farmer depends for success upon his knowledge of the chemistry of soils. Chemistry is indispensable to the manufacturer. The preservation of material, which is only one out of its many applications, is vital to the success of the business. The profession of medicine is entirely dependent on the help of the chemist; while mining, printing, cooking and many activities are somewhat dependent upon him. But we shall have to say that the chemist has made a profession of his own, and since the engineers claim him, we shall discuss him under this head, and call him, what he really is, a chemical engineer. If we had time it would be interesting to trace the history of chemistry. Its forerunner was alchemy, and you have probably read of the almost weird experiments that

the alchemists used to make. But we are more concerned with what chemistry is doing today. There are three distinct divisions of this profession. First, there is what is called academic chemistry. This would include the teaching of chemistry and research work in the university laboratories. Second, there is industrial chemistry. This is also research work, but in a laboratory conducted in the interests of a manufacturing plant, or in a consulting laboratory for manufacturers in general. Third, there is the chemist employed by the government, either city, state, or federal. To show how many professional chemists there are in the country and how they have increased, we might quote three census reports; in 1890, there were 4503, in 1900, 8887, and in 1910, 16,273.

Qualifications

First of all the chemist should have the instinct for research. Until you are older it may be hard to understand just what is meant by this. It implies, for one thing, the love of study, and the willingness to work for perhaps hours at a time over some technical point. It is confining, thoughtful, painstaking work. At your age you can scarcely be sure whether or not such work will appeal to your nature; tastes of this sort often develop during one's college course.

Preparation

The chemist must complete high school and college courses, specializing in chemistry. Then the expert chemist should also take a graduate course. The demand is so great that sometimes positions are offered before the work is completed; but the young man who holds out to the end will have the best chance in the long run. There are no chemical schools pure and simple; but in every

engineering and scientific school an abundance of chemistry is taught. If this general line of work interests you, it might be well to take a college course, specializing in chemistry, then by the time you had finished your four years you would know what particular line you wanted to follow. Or if you should choose mechanical engineering, agriculture, mining, or medicine, you might decide that you would like to specialize in the chemical side of one of these.

Opportunities

The great lure in the field of chemistry is the fascination of the work and of what it is accomplishing. One can feel that he is doing something that is absolutely necessary. The chemist has made good sanitary conditions possible. He, as much as the physician, is contributing to the general health of the country. That is of first importance, but he is also contributing to its wealth. One great field of his work is the utilization of by-products, that is, the discovery of some use for what was formerly considered waste. Perhaps you have heard it said that the Chicago packing houses use everything about pigs except their squeals. This is largely due to the chemist. Rockefeller and Carnegie both say that they owe their wealth to the chemist. Regarding by-products, read the following quoted from a professor of chemistry: "The corn stalks from glucose plants are used for paper-making, and oil is extracted from the seed germ. Formerly only oil was made from cotton seed. Today paper, felt, fuel, stock feed and potash are among the other products. Skimmed milk from creameries was useless until the chemist demonstrated that the contained casein could be curdled with alkali and a dried product, soluble in water and used in paper sizing and interior decoration, made

therefrom. It may also be hardened for buttons, combs, piano keys, billiard balls, etc."

The salaries of expert chemists are exceptionally good. Some are receiving salaries of from $5000 to $50,000 a year. The chemist is among the highest paid men in a manufacturing plant, and he is sometimes made superintendent. These are, however, at the extreme top, and the pay in general varies according to the special line of chemistry taken up. It is absolutely necessary to have a thorough training first, then a chemist may begin at $75 or $100 a month.

It is said that the most important discoveries are yet to be made by the chemist. In steel works, food plants, leather goods and farm industries, the chemist is in demand. Small wonder that we are told that the field is unlimited. Dr. Wesener, of the Columbus Laboratories in Chicago, says that the world owes more to the chemists than to any other one profession. He may have the satisfaction of knowing that his profession has done the most for the betterment of mankind. The two most important ways that he mentions are "the maintaining of food supply by reclaiming exhausted soil and conserving soil fertility, and the searching out of chemical specifics to combat and cure disease."

From the industrial point of view it is said that three fourths of the manufacturing today is based on chemistry. Almost everything that we use in daily life is made what it is through this science. It seems as if there could be no mistake in the boy of ability going into this line of work; and yet here, as everywhere, he ought to be sure that he is enough interested and of the right temperament. One young man of brilliant mind had been told that chemistry was the field of the future. He spent several years in preparation and work and then decided that the

Courtesy Sears, Roebuck and Company

Work for the chemical engineer. These chemists are testing the goods that will be offered for sale

Courtesy National Cash Register Company

A corner of the inventions department in a factory. This is where the engineer with an inventive turn of mind has his opportunity.

laboratory work was too confining and that his nervous make-up demanded a life with more variety and less painstaking application. So he decided to go into law, but since he did not feel that he could give three more years to preparation, he got ready by spending his evenings and vacations reading law. He was bright enough to pass his examinations and to get started, but after six years he was still having a bitter struggle. Had he only known in the beginning that he was not adapted to laboratory work, much waste of time and energy might have been avoided. So the mere fact that the pay is good and that there is much interesting work to be done does not by any means indicate that all boys should try it.

We are not accustomed to think of engineering as woman's work, and at present it does seem that she will have to allow men the greater part of that field. However, some women have accomplished much and have held good positions in the field of chemistry.

EXERCISES

1. What do you understand by engineering? What do the engineers in the army do?

2. Explain why the study of mathematics is a necessary preparation for the engineer. How is it connected with building bridges?

3. In many large manufacturing plants, there is a department especially for the working out of inventions. Which of the various types of engineers might be working in these departments? Suggest some of the kinds of things that they might be contriving.

4. Of what value is the knowledge of a foreign language to an engineer?

5. Mention all of the technical schools that you can. See if you can find out what is the particular advantage of each one.

6. Make a list of the occupations that are dependent upon the engineers. Tell exactly in what way this is true.

7. What great engineers do you know about? Tell something that each one has accomplished.

8. What kind of an engineer do you think has the most desirable

work? Why do you think this? If you were going to be that kind of an engineer, tell just what preparation you would need, and just where you would go to get it. How much would you have to invest before you were ready to begin remunerative work? Would it be possible for you to work and study at the same time? Just what kind of work would you expect to do after you had completed your education? How would you go to work to get started in your profession?

9. Make a list of the occupations. Check those that are dependent upon the chemist and tell how.

10. Do you believe the statement made by many people that the chemist is bound to be a lonely person? Defend your opinion.

11. What are some of the by-products of the Stock Yards in Chicago?

12. Do you know of any women engineers? Which kinds of engineering would it be possible for women to go into? Is there any reason why they should hesitate to enter any one of them? Considering the way that women have gone into all sorts of manufacturing since 1917, do you still think there is any limitation to their work as engineers?

REFERENCES FOR FURTHER READING

NEWELL, FREDERICK H. *Engineering as a Career*. D. Van Nostrand Co., 1916.

DOUGLAS, JAMES. *Untechnical Addresses on Technical Subjects*. James Wiley & Sons, 1908.

WILLIAMS, ARCHIBALD. *How it is Done*. Sully & Kleinteich.

COLLINS, JAMES H. Article on "Chemistry" in *Saturday Evening Post*. Feb. 10, 1917.

Magazines: *Electrical World, Engineering News, Western Engineering*

GODDARD, DWIGHT. *Eminent Engineers*. Hill Publishing Co.

CHAPTER X

PERSONAL SERVICES AND PROFESSIONS FOR ENTERTAINMENT

There is a group of occupations that we might call personal services, because they result in a greater convenience and comfort for the individuals engaged in the work of the world. In our diagram we have placed them in the series above the professions, for they are needed to help here as well as in what we have called the fundamental occupations. Under this head might be classed, hotels, barber shops, domestic arts, millinery, dressmaking, and tailoring. Let us briefly discuss each one in turn.

DRESSMAKING, MILLINERY, AND TAILORING

Naturally, dressmaking and millinery will interest the girls more than the boys. The boys may be surprised, however, to learn that some of the most distinguished dressmakers have been men, and that occasionally we hear of a man who is particularly gifted in designing and fitting. On the other hand, tailoring is a field that offers many opportunities to boys and men. A large proportion of this work is now being done in factories, and the discussion belongs under that head. But after all, we know that there is still a big field here for the girl who has the skill and is interested, and that there are countless

tailor shops in which boys are going to find opportunity to earn a living.

Qualifications

1. Like the manufacturing trades, this occupation requires manual skill. This means that the hands should be deft in putting things together. Some people have a natural aptitude for this and there is also much that can be learned. In both dressmaking and millinery a girl must be quick, accurate, and neat in her work.

2. There should be some inventiveness or ingenuity in deciding how things can be put together in order to get the most effective results. Some dressmakers and milliners have manual skill and training so that they can do exquisite work both in neat sewing and in finishing, and besides this, they may be able to fit perfectly; while others, who are careless in fine work and in finishing, have the knack of making a jaunty bow, or of draping a dress, or giving a twist or turn to a bit of trimming that makes the whole hat or gown effective and stylish. The most successful milliner or dressmaker will have both of these qualities.

3. She should have business ability. Unless she is working for some one else, she must have the qualities necessary for a salesman, for just as necessary as producing a good product is the finding of customers for that product. Along with this comes the business man's ability to keep accounts. Whether a dressmaker or milliner is working by herself or whether she is running an establishment, she should be able to keep accounts, to know how much she is spending for material, for help, for tools, and for rent, so that she can tell whether certain expenditures are good investments, or whether she would better cut down in this place or charge more for certain work.

Preparation

First, a progressive girl will realize that she cannot learn this business once for all. Styles in clothes are continually changing and part of a girl's training for this work consists in learning how to keep abreast of the styles, and even ahead of them by constantly studying the most up-to-date shops in the big cities to learn what is being worn, and by studying the fashion journals, especially those from New York City and from Paris, to learn what the styles will be six months from now.

But there are two ways of learning the trade in the first place. A girl can enter a large establishment at a low salary with the understanding that she is to learn the trade from the bottom up. She must be careful however in making the arrangement to provide that she will in reality learn the trade and will not be kept indefinitely lining hats or sewing buttons and hooks and eyes on garments. If she gets work with a private dressmaker or milliner she has a surer opportunity of learning every detail of the business.

The other way of learning is to go to a school of cutting and designing. This is probably the best and quickest way of making progress, but it is also more expensive, as the learner is paying tuition rather than earning even a small wage. However, there are splendid schools of this sort. The girl learns not only the most accurate but the quickest way of cutting. She learns how to fit and to design both from a scientific and from an artistic standpoint. She learns the various kinds of stitches and where they should be used. She also becomes acquainted with many sorts of garments, whereas, if she were learning with a dressmaker, her field would be limited. In a school she will probably be taught tailoring and other

special branches of the trade that would be useful in running an establishment of her own.

Again, a bright girl may get a very good start from the courses given in high school. Here besides the courses in dressmaking and millinery, the course in drawing will be helpful in drafting patterns which involve the proportions of the human figure. The art course will train her also in harmony of color.

Opportunities

The following scale of wages is taken from a survey that was made of the dressmaking and millinery shops in Cleveland, Ohio. It will give you some idea of the opportunities in this line, but you must remember that the high school graduate who has taken what training she can get there, has a chance of advancing much more rapidly than the girl who has not had this training.

Beginners or apprentices run errands, learn to sew on buttons, make button holes, etc.

In two years, they may become "helpers"; and in three or four years, "makers" who are responsible for getting the garment put together; then in three months or more, they may become "drapers," who plan and drape the garment on a form over a lining that has been fitted to the customer.

Now, as to pay, the beginners get from $2.00 to $4.00 a week, the helpers, from $6.00 to $9.00 a week, the makers, from $10.00 to $12.00; and the drapers, from $18.00 to $20.00. Those who get the higher wages are usually paid the additional amount for supervision.

In the millinery trade the scale of wages is a little different, the trimmers and designers getting considerably more than the other workers. The average maker gets from $4.00 to $15.00 a week, while the trimmer gets from

$15.00 to $50.00. The rise is very slow and the trade is decidedly seasonal. Employers advise girls not to enter this work unless they can climb very quickly to the top. In fact, unless a girl shows signs of being able to advance very rapidly they will not take one who must support herself.

This is the condition in one large city and the pay and opportunities seem to be similar in other places.

In either of these lines a woman may go into business entirely by herself. An ordinary seamstress makes $1.50 a day and up, while a first class dressmaker makes about $3.00 a day. She also has the opportunity of buying her materials at a discount and she may increase her income by selling these.

This is a field which is by no means overcrowded. In the busy season, aside from the opportunities in the large establishments, the demand for first class dressmakers and milliners is greater than the supply. In almost every town, the best dressmakers find their time very much overcrowded. This often leads to starting a shop, and gradually hiring more and more help. Of course this means a greater investment of money and consequently implies some business ability. Millinery shops belong more in the class with stores and demand the ability to sell goods.

In both of these lines there is the great fascination that comes from creating things, from seeing a piece of work well done, and from giving free scope to originality and artistic ability. As in other lines, a woman here may develop some specialty; for instance, one woman who started with a very small beginning, found that she had a talent for designing handsome gowns and particularly for buying handsome laces and arranging them in an artistic way. In this way she made a small fortune for her-

self. A milliner specialized in all sorts of automobile hats and was very successful. Another woman specialized more narrowly, making nothing but baby jackets, and was finally able to hire a shop down town and earn a good income.

On the other hand, it is only fair to say that this is very tiring, nervous work. Also the frequent encounters with unreasonable, fussy customers require a good deal of poise. However, there are disadvantages in every occupation, and if a girl loves her work they sink into a minor place.

As for the boys, the chief opening is in the line of tailoring. The United States Census Report of 1910 shows 163,795 men tailors, and 40,813 women tailors. In the clothing industries are 95,715 men and 48,892 women. This seems to indicate that there are still opportunities in the tailoring business. The great need of rapid production of uniforms for the soldiers during the Civil War caused a sudden growth of clothing factories. The demand for ready-made garments is constantly increasing, but it will be long before the individual tailor will be replaced entirely. Many people are not altogether normal in their proportions and so require suits that are fitted especially to them. Many, also, can afford to pay a little more for the sake of the superior style and workmanship that a really expert tailor can give. The boy who learns his trade in a tailor's shop and aims to own an establishment some day, must acquire more than mere skill in cutting and fitting. He must become acquainted with various kinds of materials, must learn how to buy in the most economical way, and, particularly if he contemplates tailoring for women as well as for men, he must cultivate an artistic sense.

Unfortunately this occupation is decidedly seasonal. For about half of the year the work must be pushed at a

tremendous rate, while during the remaining months there is a lull in operations. Another disadvantage is that the man who aims to become a designer and contrives new styles, cannot get a copyright for his work. This partially explains the constantly changing styles; for as soon as an attractive style appears, it is copied by many tailors, and so the designer must develop something new. In the shops the best pressers are paid $18 a week, the cutters $25. This is mechanical work that can be learned very quickly.

The management of a shop requires executive ability and ingenuity. It is said that frequently tailors are poor cost accountants, and that this explains why many of them fail. Special systems of accounting have been worked out for the tailor, so that the boy who is interested may learn the business in a scientific way. An idea of the opportunity may be had from the fact that many of the employers began as employees. Most of these are the sons of immigrants.

DOMESTIC ARTS

Here again is an occupation in which girls are particularly interested, although as in the case of dressmaking some of the finest workmen along these lines are men. Because service in the household has been given to girls with little or no education, who received small pay and had few privileges, the occupation has fallen into a certain disrepute. But conditions are changing. The girl who must go to work before she has finished high school is still likely to go into a factory or to clerk in a store with very small wages and without much hope of advancement. On the other hand the idea of domestic work has changed, and as we look into it we shall find that it includes a wide range of occupations and that it is likely to offer

opportunities to many girls, not, however, as household servants in its former interpretation.

Qualifications

The qualifications are many and varied according to the special branch specified; but in general we may say that they are,

1. An ability to manipulate and to do things quickly, and with the fewest possible motions.
2. The power of organization and management.

Preparation

A girl may learn to be a competent cook by working with an experienced, capable house-keeper, who is willing to take the time to teach her. However, for the most desirable positions, there should be scientific training where there are laboratory facilities. Here, a girl not only learns what to do and what results to expect, but she learns why she does each thing, and why certain products are failures. Thus much time and material are saved. Also she learns what foods are the most nourishing and digestible, and the most economical ways of preparing them. Many high schools now have courses which give much of this training. If a girl would go beyond that, there are splendid courses in some of the universities. Then there are in some cities special schools of domestic science. From the point of view of management, a good course in bookkeeping and in economics is most desirable. Cost accounting and scientific management, which are considered so necessary for business men, would put all of this sort of work on a much more efficient basis.

Opportunities

A girl without special training may go into domestic service and make about $5.00 a week besides her living expenses. But she has almost no chance of advancing beyond this. What, then, are some of the positions in which a girl with training can find desirable work? If she becomes expert she may become a cook in a large private home, or in some institution. She would clear about $50.00 a month and her work would be pleasant. In these places there is usually a girl to do much of the routine work; such as, washing the dishes, and preparing the vegetables. So that the cook is doing skilled work that requires special preparation.

Or she may be engaged as a housekeeper. In many wealthy homes, there is some reason why the mistress is unable or is not inclined to run her home, or perhaps a widower is left with a family of children and must hire some one to take the place of home-maker. In such positions, there are usually pleasant surroundings, plenty of help, and often a social standing, the same as that of the family in which she works. Or she might get a similar position in an institution or in a girls' dormitory at some college. These are administrative positions and require executive ability. There is the responsibility of running an establishment, of directing other people in their work, of seeing that financially the business is well managed so that expenses come within the allowed amount. Other examples of this sort are superintendents of hotels, hospitals, summer resorts, and managers of clubs.

An expert cook who understands thoroughly the science of food values, and all connected therewith, may become a dietitian, in a hospital or institution.

When a girl has mastered the art of preparing food

in an attractive way and of managing expenses well, with a little capital, there is a chance of her making a success in a tea room or food shop. Some women have made a reputation by furnishing some one article, such as, pickles, pastry, jelly, or salad, for a high class restaurant or tea room.

When you consider these opportunities, and also that many girls find this sort of work attractive, that if they marry later, it has only made them the more competent to manage their own homes, and that much of it is work that can be carried on after marriage, it seems as if it would pay to consider it carefully. Many of these opportunities put a woman into a position to care for the well-being of other people, and there are many women who can be satisfied in no other way.

HOTELS AND RESTAURANTS

It is easy to see that hotels and restaurants belong to the group of occupations that are of service to the others. According to the 1910 census, there were 64,594 hotel managers in this country, and 60,832 who ran restaurants of one sort or another. Of these, 24,750 are women. This does not count all the other employees in such places; many of whom, however, we discuss under some other group. They would come under the head of domestic arts, telephone and telegraph operators, clerks and bookkeepers, stenographers, and others. We shall, in this place, confine our discussion to managers and their assistants.

Qualifications

1. You yourself will probably say immediately that the first essential is executive ability. There are many

departments to be managed, and as in any other undertaking success or failure is likely to depend upon this quality in the man at the helm.

2. Then there must be the qualities of the salesman. The hotel manager must offer the right sort of goods in the right place; that is, he must not try to run a fashionable city hotel in a small town, or to run a cheap lunch counter in a fashionable district. He must know how to make what he has to offer attractive to his patrons and to advertise so as to bring in many people. And, as we have seen, all these abilities are the marks of a good salesman.

3. Perhaps more than in any other line the man in this business must have the quality of courtesy. He is obliged to serve people of all sorts of queer dispositions, and he must be tactful in catering to their little whims and unreasonable demands. His great object is to make his patron's surroundings comfortable and pleasant, and the more he does this the more likely he will be to succeed.

Preparation

One does not go to a technical school for this business; instead, he makes a thorough study of everything that has been done in this line. A general education, at least that of the high school, is essential for its broad foundation to enable the manager to meet and converse with all sorts of people. A course in accounting would be most desirable. It is said that no other business could thrive with the tremendous waste that takes place in hotels and restaurants. Cost accounting, which has received such an impetus lately, would help much in determining where the loss came. Recently a banking house — a business which we feel is made up of accounts — hired a cost ac-

countant to see just what each part of their business was costing them. They found that in some lines they were spending more than they were making, and from this they were able to make valuable adjustments. How much more would such a system help in hotels, where such an immense amount of money is spent on food, on linen, and for help! Beyond this preparation, a prospective manager would probably begin in some one of the lower positions, and while he was getting points on the business would be saving his money until he had enough capital to become a proprietor.

Opportunities

As opportunity here means not obtaining a position but owning a business, it depends largely upon the ability and capital of the person concerned. Of course, in the largest hotels, there are salaried positions such as managers, for when one man owns a number of hotels or restaurants, he must employ a number of managers. One man is in business for himself as a "doctor for sick hotels." When he hears of a hotel that has failed, and there are a good many of these, he plans to buy this, find out what the trouble is and go about making it pay. He seems to have a genius for this. Then when he has made it a paying business, he sells out and looks out for another.

MUSICIANS, ARTISTS, ACTORS

We have called these "professions for entertainment," and they serve all other occupations; for without the culture and pleasure that men and women derive from them, life would be a pretty dull affair, and very monotonous at times. They serve to make life richer and more beautiful. The artist also frequently works in cooperation with the more material occupations; for in-

stance, the architect, the illustrator, the cartoonist, the landscape gardener, the photographer, and many others apply their art to very practical uses.

Qualifications

One statement may be made of all occupations in this group; namely, that it is useless to start out unless one is certain of a decided talent. That is, musicians, artists, and actors, just as poets, seem to be born, not made. Not that the same qualities are present in all, but they are so very pronounced that this may very safely be said: If you have taken advantage of all the opportunities in these lines given in high school, either you will be sure that you have not a talent, or you will at least have a strong suspicion that you have. In the latter case it would be well to consult with some expert in the line in which you think you have an aptitude, and get his advice as to whether you have a talent that is worth cultivation.

Preparation

Of course these professions require very thorough and special preparation. There are private teachers and special schools for all of them. These are easy to find, but if one is to make a profession of his art, it would pay to find the very best. There are schools of music and art in connection with most colleges and universities, and there are special schools in the large cities. Those who have made the very most of their profession, have usually spent two or three years in Europe. But as in other professions, one must study as long as one practices his art. One famous musician said: "If I neglect to practise one day I know it, if I neglect it two or three days everyone knows it." There are changes and improvements in art and in acting as in everything and those engaged in that work must

keep up with the advances. There are schools of acting and besides that most actors start out as pupils in some good company. That is, they are necessarily pupils, because the training is very severe. The man who is putting on a play will not run the risk of having any defects in his performance for the sake of anyone's feelings, so one who starts out as an actor must make up his mind to endure a good deal of frank criticism.

Opportunities

The period of struggle and poverty for people in these professions is proverbial. One must be of the very first rank and others must know that he is before he will be in demand. But for those who are really gifted and prepared, there are many sorts of positions. The musician may go into concert work, he may give lessons, or he may go into an orchestra and play on the many occasions that are now demanding such music. Organists and pianists can get positions in churches and in places where there are large assemblies.

We have mentioned the opportunity of the artist as illustrator. You can see by looking at the cartoons in the daily and weekly papers that there is a place for the artist who also has a nimble wit. These have an opportunity for a wide influence; for the picture often makes an impression where the printed word fails; and many absorb the pictures who do not take the time to read. The clever illustrator can draw a good salary from some publisher; and there are many forms of commercial work; such as coloring slides, designing book covers, place cards, and Christmas cards.

Lena Ashwell, the actress, in telling of the opportunities in her profession, does not paint an outlook that seems very promising.

It is difficult to give any statement of the income from these professions as it varies so greatly; but it is perhaps safe to say that there is not much chance except for those of unusual talent. On the other hand there is an especial joy for those who have talent and are able to make their living in that way. They love their work as perhaps those of no other occupation do.

EXERCISES

1. Why do most people prefer a man to a woman tailor?
2. Why should dressmaking belong especially to women?
3. What has cut down the dressmakers' trade?
4. Is the constant change in styles an advantage or a disadvantage to the dressmaker, the tailor and the milliner?
5. Which do you think would be better for a girl: to learn dressmaking or millinery in a special school for that purpose, or to get a place to work with a dressmaker or milliner or in an establishment? Give as many arguments as you can on both sides.
6. How would a boy start out to learn the tailoring business?
7. An ambitious young dressmaker, after learning her trade, studied in the Art Institute in Chicago. What could she find there that would help her in her work?
8. Millinery is decidedly a seasonal trade. What is meant by this?
9. What do tailors do besides merely making suits?
10. What is meant by poise? Explain how it is needed in all three of the lines of work mentioned here.
11. If you were planning to be either a milliner, a dressmaker, or a tailor, how would you prepare for your work?
12. Some time ago a magazine published a long argument to prove that girls should go into domestic service rather than into factory work. Give as many arguments as you can on both sides.
13. In what sort of places are men employed as cooks and chefs? Are they more capable here than women?
14. What is the connection between chemistry and cooking?
15. What is meant by the Smith-Hughes Act? On account of the provisions of this act, many of the universities have established houses in which a certain number of the girls live in relays for about

a month at a time. Find out what the object of this is and what they do there.

16. What is meant by the American and the European plan in hotels and restaurants? Which do you think would be more profitable for the proprietor?

17. What is meant by "table d'hôte" and "à la carte" service? Which is more likely to help in carrying out the plans of the Food Administration in war times?

18. In what way is there a waste in the hotel business?

19. Mention the names of as many illustrators as you can.

20. Are there any productions of real artists in your community? Can you think of any place in which an artist's work might be valuable?

21. What peculiar risks do musicians run? What kinds of insurance do they have to take out?

22. Why are so many girls and some boys eager to go on the stage? What kind of lives are they likely to live if they do go?

23. Which sort of art do you think benefits future generations most?

24. Why is the destruction of cathedrals by the Germans considered such a terrible crime?

25. Can you explain why it is that so often artists scarcely make a living?

REFERENCES FOR FURTHER READING

Bulletins: *Vocations for Boston Girls.* The Girls Trade Education League. Boston, 1911.

Bulletins: *Vocations for Boys.* The Vocation Bureau of Boston, 1916.

FRANCKE, MARIE. *Opportunities for Women in Domestic Science. System* for January, 1917. "A Doctor for Sick Hotels."

ALLINSON, MAY. Dressmaking as a Trade for Women in Massachusetts. Washington, Bureau of Labor Statistics. 1916.

WATKINS, EDWARD. *The Secret of Successful Tailoring.*

BEEMAN, CLAUD V. *Cost and Selling Price for Merchant Tailors.*

Bulletins: 144, 145, 147. Washington, Bureau of Labor Statistics.

CHAPTER XI

PERSONAL QUALIFICATIONS
(ESSENTIAL TO ALL OCCUPATIONS)

We have discussed so far some of the opportunities in various lines of business such as selling, manufacturing, banking, transportation, and the professions, and some of the specific qualifications that are required in each line. There are, however, some personal qualifications that are fundamental to success anywhere. These fundamental qualifications may be grouped under the headings: Personality, Health, Intellect, Character, Friends. In fact, a person who looks well after these essentials may succeed in any of a vast number of occupations.

PERSONALITY

By personality is meant the combination of voice, dress, manner and disposition which marks you as an individual. These are characteristics some of which you inherit and some of which you have learned in the home and in society. The point to be specially considered is that when one starts at it early enough in life it is possible to change these things to a very large degree. That is, people from seventeen to twenty-three or four are in a period that we call, in psychology, the plastic period. They may, as it were, shape or mold themselves to almost any desired ideal. If, then, your ideal is set upon certain desirable things in the matter of personality you can accomplish these things now. A little later in life,

when habit becomes fixed upon you, it will be very difficult to change these habits and you will very probably go through life with the same personality, either attractive or repelling, which you have at that time. Let us consider in detail some of the elements that go to make up personality.

1. One of the first things that people will note about you is your voice. Do you ever stop to consider the quality of your voice in conversation or in talking over the phone? Is your voice pleasant, clear, and modulated, or is it harsh, nasal, and uncontrolled? Elihu Burritt says of the voice, "Watch it day by day as a pearl of great price, for it will be worth more to you in the days to come than the best pearl hid in the sea. A kind voice is joy, like a lark's song, to a hearth at home. Train it to sweet tones now and it will keep in tune through life." The voice has much to do with the impression a person makes on first acquaintance.

2. The second thing that is instantaneously noted is the condition of your dress and person. This is a pretty intimate matter, but it will pay to look it squarely in the face. For instance, is your dress neat and appropriate for the work you have to do? You must be neither slouchy nor overdressed for the work on hand. One's person must be well kept; hands clean, hair combed, shoes clean. These are matters which make a very decided difference in the success of one who deals with the public. A customer is either repelled or attracted by the neatness or appropriateness of the salesperson's dress. For this reason and because everyone's taste and judgment in this matter cannot be trusted, some stores insist that their clerks wear only black and white; and some make stipulations as to the manner of dressing the hair. Since business men consider these matters so important it is

surely worth our while to give some attention to them. One man, who employs many people, always makes a point of observing the hair and shoes of the applicants, as he considers these an index of a candidate's fitness. All this may seem superficial and, of course, certain other qualifications are more important, but on first acquaintance people are judged by their personality, and voice and dress have much to do with this.

3. After the impression made by the general appearance and the tone of voice, will come the judgment formed by your manner of meeting people. In training yourself to an attractive manner, there are three or four things to remember. The first important asset is courtesy. Here are some of the things that successful business men have said about its value: Mr. George Whelan, the president of a company operating six hundred separate stores, puts the following estimate upon courtesy: "Courtesy is the cheapest commodity in the world and yet the most far-reaching in its effect. Incidentally, courtesy is the basis of good retail service. I have laid down the rule that not only should every salesman say 'Thank you' to every customer, but also he should say it as if he meant it. We have spent fifty thousand dollars hammering this idea in. So thoroughly do I believe in it that one day last year I sent the following telegram to every clerk in our employ: 'Did you say "Thank you" to every customer you waited on today?'"

The following is quoted from a series of cards which a railroad company sends every month to its employees: "There is only one time to be courteous — that's always. The time when it is hardest to be courteous is the time when it is most needed. Strong men can always afford to be gentle. Only the weak are intent on giving as good as they get. Loss of temper gains nothing. Remember your

greatest asset is courtesy. Try it. Every smile of satisfaction that you bring to a patron's face is a cash asset to us and to you. Cultivate courtesy for what it means to you."

Just one more quotation, this time from a successful banker: "I do not speak idly in praise of politeness, for out of the experience of 56 years in the banking business it has been borne in upon me almost daily that courtesy is one of the prime factors in the building up of a career. It is the hallmark of a gentleman and of the keen man of affairs."

There is no question of the value of politeness in business. As great a corporation as the Chicago and North Western Railroad lays great stress upon its necessity over the telephone where there is a great tendency to be abrupt and by quick, short answers to cause offense unintentionally. This is best illustrated by a few examples of phone conversations given in the *North Western Magazine:*

"Here is a sample of all too common impolite use of the telephone: A call has come to the office of Mr. Brown. The caller is answered like this: 'Hello! No. You've got the wrong office.' (Business of slamming the telephone on the hook.)

"It appears the caller wanted the office of Mr. Jones. The proper and polite handling of this case would be something like this:

"'This is Mr. Brown's office. No, you should have Mr. Jones' department: please hold the wire a moment and I'll try to get it for you. There's Mr. Jones. Sorry you had this trouble.'

"Another sample of something to be avoided, because it is particularly irritating, in which both sides of the telephone conversation are given:

"Call—'Is this Mr. Smith's office?'

"Answer —'Yes.'

"Call —'May I speak with Mr. Smith?'

"Answer —'Who is this?' (or 'Who are you?')

"This brings out one of the most exasperating things in the whole category of telephone irritations. The caller wishes to speak directly with Mr. Smith. Naturally he is annoyed to have some subordinate — perhaps the office boy — ask in anything but a polite way who he is. It may be necessary to protect Mr. Smith from inconsequentials calls by telephone, but this may be done with politeness and diplomacy. Let us suggest a much better way to secure the desired protection:

"Call —'Is this Mr. Smith's office?'

"Answer —'Yes.'

"Call —'May I speak with Mr. Smith?'

"Answer —'Just a moment till I see if he is in. May I say who is asking for him?'

"Nine cases out of ten this polite and proper query brings the desired answer. The caller is not irritated by what sounds like rudeness, and the giving of his name may enable you to transact the business in hand without bothering Mr. Smith at all.

"Always avoid asking directly, in such a case, the name of the person calling. A little diplomacy will save the caller irritation and you the charge of being rude.

"What we have said applies also to all telephone dealings between employes. The habit of politeness, once formed, makes no exceptions. It has not one face for the public and another for your fellow worker."

It is most important for you to notice the last point. If you give the habit conscious attention now, you will find later that politeness comes naturally and that you have gained a great asset for your business career. This point is being emphasized more and more, and you can scarcely

pick up a magazine that does not have some comment on the subject.

Next comes a quality almost inseparably connected with courtesy, namely, tact. Indeed, I suppose that a really courteous person is pretty sure to be tactful. Tact consists not only in doing the polite thing, such as saying "please" and "thank you," allowing the other person to precede you through a door, or offering a chair. It consists rather in doing and saying the thing that will really make the other person the most comfortable. For instance, every one feels a little complimented when his name and face are remembered. Tact is also required in making each person you deal with feel that you are giving his transaction your full attention. Do not let him feel that you are in a hurry to get through or that you are more interested in something else. Perhaps these suggestions will make the meaning of tact clear. It may be gained by always seeing the other person's point of view and it adds a charm to personality that is desirable in every occupation.

A third point closely akin to courtesy and tact is manners. That is, there is something more than courtesy and tact which must govern our attitude towards other people; we must give attention to our own individual manners even though we think they are entirely personal. Such things as unconventional ways of using one's knife and fork, smoking while talking with a lady, or rudely pushing ahead of others, will always repel a refined person. It would be profitable to make a study of manners that are generally accepted and to train yourself in them; for their sum total makes such a difference in the impression others get of you that your business success will be largely influenced by them.

But as important as any of the foregoing points, is the

endeavor to cultivate a pleasant manner; that is, one that is not marked by grouchiness or touchiness. A man who, when he comes into an establishment to do business, has a pleasant, agreeable attitude has, in a large way, won what he wishes. George W. Perkins, the great financier, is said to have a smile which is worth $250,000.

In a large store in Chicago, this sign is posted: "Civility and smiles don't cost anything. We have a large supply of both."

While we are talking of personality, one more point should be emphasized, and I am inclined to think that there are few so worth while. It is a virtue that will cover a multitude of sins. I refer to enthusiasm. Don't be afraid to show an interest in and a great liking for your work. There is nothing in the world so contagious. Charles M. Schwab, the great steel magnate, later director of the Emergency Fleet Corporation, says: "Bethlehem's biggest asset is not its rolling mill plants, its gun shops, its armor works, its rail mills; it is the men who make up its enthusiastic organization." Notice the adjective, enthusiastic, and think what that quality would mean to a big business. At any rate, Mr. Schwab, who ought to know as well as anyone, thinks it important. There is all the difference in the world between having a liking for your work with an interest in getting it accomplished in the best way, and in dragging through the eight hours that you must keep busy in order to draw your pay, thinking all the time of how hard it is and how glad you will be when the clock strikes five.

To quote once more from Mr. Schwab: "I have always felt that the surest way to qualify for the job just ahead is to work a little harder than any one else on the job one is holding down. One of the most successful men

I have known never carried a watch until he began to earn ten thousand dollars a year. Before that he had managed with a nickel alarm clock in his bedroom, which he never forgot to wind. A man will succeed in anything about which he has real enthusiasm, in which he is genuinely interested, provided that he will take more thought about his job than the men working with him."

HEALTH

The second fundamental thing that any prospective employer is going to notice in regard to you, when you apply for a position, is whether you are in good health. No employer wants a sickly person about, one who is not able to do a good day's work, or one who comes down in the morning complaining of headaches or indigestion, or one who is constantly taking days off on account of sickness. There is no need for any one to be an anaemic, nervous, excitable individual if he will take care of himself properly. The ordinary rules for health are worth while for everybody; they are included in the five following points: Exercise, Fresh air, Good food, Good hours, Good habits. Indeed the whole matter of personality which we have just been discussing, courtesy, tact, cheerfulness, and enthusiasm, is dependent to a great degree on the condition of one's health. You have probably noticed that when you feel miserable physically, enthusiasm lags and you feel generally grouchy.

The boys have seen the importance of this in the case of athletics. The professional athlete makes a special study of keeping himself fit. Actors and actresses make a business of keeping themselves in fine physical condition, and the fine points of their art are built upon this as a basis. In war times, especially, we realize the importance of health when many young men are rejected from the army

because they do not quite come up to the required physical standard, which might have been attained if they had obeyed these five rules of health. One young man, a mathematical and engineering genius, splendid in every way, in his physical examination was found to have slight trouble with his heart, and the government would not accept him. This young man had no idea that he was not in good condition, but he himself realized that the trouble had probably come because he had paid no attention to the laws of health. For months every night he had been attending parties that kept him up until one or two o'clock so that, being obliged to start for business early in the morning, he was not getting the necessary sleep. With this neglect there was no chance of recovery from the heart trouble. The disappointment was great but was a direct result of his manner of living.

The ordinary youth has an abundance of health which he should conserve as he would so much capital. It has been said of the college men in Germany that one-third killed themselves by dissipation; one-third killed themselves by overwork, and the other third ruled (or it might be more nearly true to say *misruled*) the nation. Perhaps if the first two-thirds had been more moderate, there would now be a class of educated men with a saner view of life.

The following is what a successful employer of many men says on this subject:

"Every sound man is worth building up in business, but a sick man or a man with a contagious or fatal disease is not. You must have something to build on. A man who is ill or weak cannot be cheerful, and a good clerk must be cheerful. People do not want to buy goods from clerks who look ill or cross. Hence the employer must not take chances in hiring sick people. . . ."

Your body is a very complicated piece of machinery. Ask yourself how long this machine will last. A railway man says that the working life of a healthy human being is normally longer than that of the best locomotive. But a large proportion of men do not keep themselves in working order for the normal length of time. One business man says to his employees: "It's none of my business what you do at night, but if dissipation affects what you do next day and you do half as much as I demand, you'll last half as long as you hoped."

It is hard to realize that one may draw too heavily on his supply of strength. We are in the grasp of an inevitable law. Lack of exercise, bad air, poor nourishment, late hours, and dissipated habits are bound to tell on the physical capital. But the wise youth who recognizes this truth, will cultivate a goodly supply of health and guard it against the time to come.

INTELLECT

Important as is health to success, and its importance can scarcely be overestimated, it is, nevertheless, only the basis for a still more indispensable quality. The great watchword of the present age is efficiency; and the efficiency which is demanded today is in most cases mental in character and not physical. The great rewards in money, name, or power come to the man who excels on a mental plane. The question is not whether you are bigger or stronger but whether you have a better, or better trained mind than those with whom you are going to compete. This does not alter what we said about the importance of health. Health is so much capital, but it takes intellect to build up success with whatever capital you may have.

In former days we were told that if we were honest and

industrious, we would be sure to succeed. Recently an eminent business man when asked to name the qualities necessary for success said: "Honesty and the whole category of qualities that have usually been given in answer to this question are today considered so fundamental that they are taken for granted as absolutely necessary; but they are by no means all that is necessary. For success there is no substitute for efficiency." If an easy going virtue will not carry us very far, but if we must also be actively efficient, it is surely worth our while to stop for a minute and see if we can determine some of the elements which go to make up an efficient man. Men around us are saying, "There are lots of $1200 men, but not enough $10,000 men to go around." What makes the difference between the two? Some successful men who have studied the question, say there are about half a dozen elements which one needs to cultivate if he would be successful. These are Initiative, Decision, Dispatch, Skill, Perseverance. Let us take these up in the order mentioned.

1. Initiative. By this we mean a power to start things and to carry them through. We mean that when difficulties arise, you are not balked by them nor do you ask for help, but you yourself work through to a solution. It is, in other terms, to have an ideal and the ability to move always towards it. It means also a power to invent ways of carrying on your work. Probably you have heard the story of the man who at the time of the Spanish-American war took a message from our president to Garcia, the leader of the Cuban Insurgents. No one knew where Garcia was; but he was somewhere in the mountains beyond the reach of mail or telegraph. A man by the name of Rowan was asked by McKinley to find Garcia and deliver a letter to him. This man was selected because of his reputation for initiative; and he proved

worthy of that reputation. He did not ask, "Where is Garcia?" He crossed to the island, penetrated the jungle, and in a little less than four weeks had delivered the letter to the man who it was thought could not be found but whose discovery was so necessary for this country. It is worth while to cultivate the habit of using your mind to find out ways of accomplishing things.

2. Decision. By decision we mean the power to make up your mind as to the best thing to be done and to start doing it. It is not to wish things done but to do them. We say of some people that "their wish bone is where their back bone ought to be." This characterizes the man who has not the judgment and will power to make quick decisions. A woman, who because of this ability has managed big enterprises and accomplished much in a constructive way, as a child could never make up her mind about anything. She would keep everyone waiting and cause delays simply because she could not decide what to wear, what to buy, or where to go. Finally her parents formed the plan of giving her each time just so many minutes to make up her mind and when it was once made up, under no circumstances whatever would they allow her to change. This was an extreme process and the "no change" habit is not always a good one, but it worked well as a method of discipline, and it might be a good plan for you to try on yourself if you are troubled with indecision.

3. Dispatch. Dispatch means the habit of getting busy and keeping busy until your work is done, not frittering away your time, nor wasting it over trifles, but getting at the main piece of work. In other words, it means the ability to do more than the next fellow in quantity. This may mean faster work in a given amount of time, as for instance, in the case of a stenographer; or it may mean endurance to work longer when a crisis requires it, as in the

case of a doctor at a critical time, or in business when there is an extra amount of work to be done. Figuratively expressed, the rule is, "Hitch a high speed motor to your brain." When an employee on being criticized for his slowness, answered, "But I am working carefully," his employer aptly replied, "Yes, it takes brains to work fast and still accurately." So, dispatch is also a mental quality and can be cultivated as such. One very good opportunity to practise this is at the time of written examinations.

4. Skill. Be skilled in whatever you undertake. This skill will depend first upon a good general education. At least finish your high school course if possible. Take history, science, mathematics, literature, until you have some general view of the field of knowledge. You will be surprised as you go on to find this general training helping you out at every turn. Second, skill will depend upon special training in the lines in which you wish to work. This may mean the technical training of the engineer, or normal school training for the teacher, or the business course for the stenographer. Special training makes the skilled workman. More and more as competition grows keener and keener, each occupation is demanding a special course of preparation. We have talked about this more in detail in the various chapters; and you have learned what is expected in the different lines of business. But to rise above a certain low level in any of them, one must have the skill that comes from training.

5. Perseverance. Lastly, perseverance is necessary for success. This means sticking to your work until you have mastered it. It means will power and energy combined. A little story that will illustrate this point is told about Paderewski, that greatest of pianists. On being complimented upon his brilliant playing, he replied, "I

played with an orchestra in Vienna. My work lasted four hours a day. After I was through with my regular work, I practised for twelve hours every day. Often my arms were stiff and numb, but I did this for fourteen years. Other musicians laughed at me and called me a fool. Now people applaud me and call me a genius." This is an extreme case, but often success for an individual comes from doggedly and energetically keeping at his work after most people would think that they had earned a vacation.

These five points that go to make up efficiency might be summed up as follows: Do your work more courageously, more energetically, faster, better and longer than you really think is necessary. This is the only way to become efficient and efficiency is what wins.

In a way, in school you have not been held strictly accountable for poor work. Your parents, for instance, are willing to keep you in school even if you do get some failures or poor marks. But if you fail in business your employer is not going to keep you. No excuses are listened to if work is not attended to and the appointed task accomplished. A business man is not running an educational institution, and he is unwilling to pay out money that is not earned. So you are sure to meet this test of efficiency just as soon as you start to work. Don't get the habits of loafing, indifference, and "don't care" so fixed in school that when you go to work you will be unable to get over the bad habits you acquired here. A woman who has charge of the educational work in a large department store in San Francisco, said that the high school graduates whom they employed were too much inclined to think themselves above their work. They either didn't feel the necessity or didn't have the ability to settle down to real work; but seemed to feel that they must do a certain amount of playing and loafing.

There is a committee in connection with the New York City High Schools which helps the graduates to get positions. One report of this committee says that out of 800 boys who were seeking employment only 18 came punctually although they had been particularly ordered to do so. These were appointed to come at a certain time with their applications, but not one appeared on time. When questioned, one said that he didn't think it mattered. It was particularly specified that they were to write letters on ruled paper. Not one had that kind. Some had foolscap, most of them had little sheets of cheap letter paper, because they thought it "would do just as well." This was all written up by the *New York Evening Post,* which said that these boys had been made flabby by too much coddling and that after being discharged from half a dozen small posts, they would easily lose faith in themselves or in the world in general. Does not all this impress upon us the necessity of gaining right now the efficiency that will enable us to do things accurately and well? Elbert Hubbard said: "A dollar-a-day man would receive two dollars a day were it not for the fact that some one has to think for him, look after him, and supply the will that holds him to his task. . . . The less you require looking after, the more able you are to stand alone and complete your tasks, the greater your reward. . . . Do your work so well that you will require no supervision."

CHARACTER

We have spoken of personality, that which attracts or repels at first sight; health, the foundation of everything; mental qualities, which underlie efficiency and sometimes seem to be the main requirement; — now we come to character, without which real permanent success is

impossible. We do not hear much about character in business, yet every employer demands it of his employees, and a good character is an asset.

The foundation of character lies in the right kind of habits. If keeping late hours affects your business you must get to bed early. No one wants a man with bad habits, and we are suspicious of the man who shows lack of control and drinks and plays cards to excess. Many railroads will not employ a man who is known to drink heavily. To be sure many employers do not investigate the habits of applicants, but bad habits are sure to tell sooner or later in a man's work; and while he may be able to hide it for a few years, he is bound to lose out in the end.

Another important virtue is that of being straightforward, not tricky or evasive. I think we are safe in saying that in business it never pays to tell anything but the truth and the whole truth to one's employer. You have perhaps heard the story of Colonel Roosevelt when he was out west riding over the ranges with some of his cowboys. They came across a young heifer wandering at large and as yet unbranded. One of the men tossed his loop, roped the animal, and had marked it with Roosevelt's own brand before the colonel knew anything about it. The deed was absolutely contrary to the honor of ranchmen, but the cowboy knew that it could never be discovered, and showed the result to his master who he thought would agree that he had done a clever thing for him. Instead, Roosevelt immediately dismissed him from his service saying, "He that will steal for me will steal from me."

One should make a great point of keeping out of debt. While it is not dishonest to borrow when necessary, getting into debt is very poor policy. It usually means that one's expenses are running beyond his income; and that

in turn means that he is not saving anything. The virtue of managing one's money carefully, of keeping expenses below income, and of saving something, is called thrift. Begin to save against the time when you may have need of capital, for capital is a great force in modern times. The man who has $1,000 when he needs it to start in business, or wants to make an investment, has made the first step towards success. Andrew Carnegie gives thrift as one of the indispensable qualities for a man who wants to advance. In a certain large city, teachers who are found to run constantly behind in paying their bills are discharged.

There is also great need of courage without which no character is really reliable. I suppose there is no characteristic which is more generally admired. In war times our magazines are filled with accounts of deeds which require a courage that almost staggers many of us. Courage does not necessarily mean fearlessness. In May, 1917, the *Literary Digest* published an interview with a French officer, who was detailed to carry a message across the most dangerous region near the trenches. He said that his fear was indescribable but though shells were hissing all around him he went right on with not a thought of turning back. A man who will succeed must have the element of courage in his character. Engineering, manufacturing, forestry, mining, fishing, all require physical courage; while there is no work which does not often draw upon one's moral courage.

It would be impossible to mention all the moral qualities that form valuable assets for a career. But there is one other great element in character that is being emphasized today and that is important enough to be noticed particularly. That is what is called loyalty. Loyalty means simply a willingness to give yourself generously to

whatever you undertake, whether it is school affairs, business, or a matter of public interest. Can you carry through things as carefully and as efficiently for your employer as you would for yourself? Dean Briggs, of Harvard, in addressing the senior class of that university, spoke as follows about this quality:

"One form of loyalty for which you Seniors are responsible is loyalty to your school. You are the oldest class in the school and it is your problem to maintain the standards of the school — in athletics, by supporting the team, in scholarship, by your work in the class room, in oratory, by boosting the Literary Society, etc. For what the school is this year depends largely upon you. If we are to make a successful record it will be because the upper classmen have done their share in encouraging school activities.

"Will you then be loyal to the school as something that you will be proud of when you are Alumni? Loyalty, you know, is devotion to a cause larger than the individual and apart from him.

"It is, then, in loyalty to the school that I would ask your devotion this year. A business man has said that pick and shovel are the only tools for a man who is not loyal, so you can see how loyalty stands in the business world."

On this same subject Dr. John C. Branner, of Stanford University in California, spoke to the students there:

"The subject seems to be especially worthy of your attention just now because the habit of loyalty is one that may be cultivated during your student life; it certainly will not spring into full-fledged development at some future time when it happens to be wanted. Loyalty is going to be an important factor in the making of your char-

acter, and even, if you care to look at it in that light, an asset in your profession, or in your business.

"When you get through your university studies and go out into the affairs of life, if you become employers of other men, you will lay great stress on the loyalty of those you have about you. You may not put it to yourselves in just this form, but if you are wise, you will none the less be influenced as much, or even more, by the loyalty of your employees than by any other one quality they may have. You will say of every man you engage: 'If I can't trust this man to think of and work for my interests, I don't want him around, no matter how skilful he may be in his particular line of work.'

"The matter simply reduces itself to this, that a man who is not loyal is not wanted by anybody for anything.

"Let us have the opinions of men of wide experience. I once recommended a young man for the position of assistant to one of the leaders of science in this country, who wrote back to make further inquiries, and wound up with this. 'I want a young man who is orderly, interested in the work and who will devote himself to my interests. If he will not devote himself to my interests I don't want him, no matter how competent he may be.'

"You will note that loyalty demands that you assume certain risks. This is inevitable. Loyalty without risk must be of a pretty poor quality. If there is anything especially pusillanimous in human nature, anything that one instinctively despises, it is the disposition to stand aside when there is danger to be faced, or to wait to see which side is going to win before choosing that particular side. Take the risks and go cheerfully forward."

Dr. Branner has hit the nail so squarely on the head that we scarcely need discuss the matter further. Loyalty carried out to its limits would seem to include many other

virtues. A high official in a large manufacturing concern, one who has much to do with hiring boys, was asked what he considered the chief qualifications necessary in a boy starting out to earn his living. He said that the first essential was discipline, that is the ability to accept and execute orders without question; and next was loyalty carried to the utmost extent. This would include an interest in the firm and a willingness to do more than the set task. He said that it took most boys two or three years to sense this thing and that their chance of advancing would be much increased if they could only learn it before leaving school.

Practical business men ask for loyalty to the firm, but one might be working for a company to whom he would find it impossible to maintain his loyalty and at the same time his self-respect. Perhaps it would be better to say, Be loyal to right principles. Then the men and firms who are worthy of loyalty will be sure to receive it.

Two elements of character have not been discussed, because they are so self-evident and easily understood that they need only to be mentioned. Everyone knows that if he is worth anything, he will be honest and industrious.

So as points of character to be especially cultivated we have good habits, thrift, courage, loyalty, industry and honesty.

FRIENDS

At the beginning of this discussion, we said that there were five personal qualifications that were fundamental for success in any occupation. These were personality, health, intellect, character, and friends. How many of you have ever thought how important in a man's life, both for his success and his happiness, are the kind of friends that he makes? It is worth while as you

start out in life to try to make and to keep good friends. In a way, friends measure the man. If your friends are careless, indifferent, thoughtless, they will tend to pull you down to their level. If you make friends with people who are energetic and ambitious, you, too, will strive for these qualities. Can you make and keep true friends, friends who will stand by you in need and will be a help to you as you go on your way from success to success? Robert Louis Stevenson asks: "Of what shall a man be proud if he is not proud of his friends?" I know of a capable young man who several times lost out in trying to get a good position simply because his prospective employers found out that his intimate friends were young men of undesirable character. They could not believe that he was different from those with whom he chose to associate.

In consideration of these five points, Personality, Health, Intellect, Character and Friends, think about this question: "Has a man filled the full measure of life when he has done these things?" We have spent some time in considering many different occupations; what qualities are required for entrance into them, what remuneration may be expected, what are the opportunities for progress, and what other advantages and disadvantages are connected with them. We have tried to consider the hard facts of life and it may seem as if we were chiefly concerned in finding out where the most money can be made. But if this were our aim, the end of our life would be rather unsatisfactory. Not only is it to our interest to make and keep good friends, but we have not filled the full measure of life unless we have shown ourselves friendly not only to individuals but to society in general. In the vocation that we would choose, can we be of much service to humanity?

One teacher of vocations says that all occupations may be divided into two classes, based upon the motive with which they are entered: those that are entered for the sake of making money and those that are entered for the sake of helping humanity. Now for two reasons this statement seems absolutely wrong: first, to a certain extent they are nearly all entered for the sake of making money. As far as in him lies, it is the duty of every man and woman to earn his living, to see that he has a competence so that in later life it will not be necessary for him to draw upon the charity of his friends or of the public. To this end he must look out for a vocation that will enable him to earn at least a fair amount of money.

But to make money is not the highest aim for a man, and he who has done merely that, even though it may be to a tremendously large degree, has not filled the full measure of life. As we saw at the beginning from our diagram of occupations, the various sorts of work that go to make up our business and professional life are all so interdependent that we cannot single some off as simply money making and others as beneficial to mankind. Take the word of those who have lived longer than you — and their testimony is almost unanimous — that in the end nothing brings real happiness but the consciousness of benefits given. At the same time remember that the occupations that allow this privilege are not simply those that we are accustomed to think of in that way, such as, medicine, preaching, welfare work, teaching. We would starve without the farmer, we would perish from cold without the manufacturer and the miner, we would have no education without the printer. Ambition is a necessary thing; often we must aim at the top in order to reach a place half way up, but after all there are comparatively few

people who make what is called a wonderful success. A business man of wide experience has summed it up as follows: "Let every man feel that he is successful if he has turned out to be a good man, with enough money for his reasonable wants, with a circle of friends and with the ability to leave behind him some work by which he may be remembered."

EXERCISES

1. Think of some one of your acquaintances and describe his personality. Which characteristics do you think he has inherited and for which do you think he is directly responsible?

2. Do you know how the speaking voice of Americans compares with that of people in other countries? Can you explain the difference? Would a change be possible?

3. When there came a shortage of labor, of wool, leather and other materials during the war, we were asked to be more economical in buying our clothes. Is it possible to do this and still fulfill the requirement of being well dressed?

4. Give ten examples of common discourtesies of people in everyday life. Give ten examples of courtesies that make life easier for other people.

5. Is it possible to be sincere and still to be tactful? Give an example of sincerity that lacks tact. Give an example of tactfulness that lacks sincerity.

6. How is it possible that Mr. Perkins' smile is worth $250,000?

7. Describe a day's work of two boys in a factory. One of the boys is enthusiastic about his work, the other considers it drudgery.

8. Why is the government so particular about the health of the men in the army? What is the reason that so many men are in better physical condition after a few months of military training?

9. (a) Give an example of a young person either in business or in one of the professions who has the quality of initiative. Give an example of one who lacks this quality. Show just what they would do under given circumstances, and what the results would be. (b) Do the same for each of the other four qualities: decision, dispatch, skill, and perseverance.

10. Would it be kind for your instructors to let you slide through your work without doing it carefully or on time? Why? Is it bet-

ter for pupils to be allowed to plan the use of their study hours, or should they be obliged to sit in a certain seat and study a certain lesson at a certain hour? Defend your opinion.

11. What is the derivation of the word "character"? Is there any connection between its source and the present meaning?

12. Give examples of circumstances in the occupational world in which the quality of courage would be necessary?

13. Mention other points that go to make up character and show their value.

14. Just what do you understand by the characteristic of loyalty? Give examples to illustrate. Is it possible to be too loyal to an employer or to a friend? Explain.

15. Does it cost anything to have good friends? Illustrate.

16. Give examples of any notable friendships of which you have heard or read.

17. Are there any disadvantages in having many friends? Explain.

18. Do you think that a man shows his calibre by the occupation that he chooses?

19. Write a paper telling what kind of place in the occupational world you would like to fill. Why have you come to this conclusion? How ought you to prepare for this place? In what part of the country would you have the best opportunities?

20. Write a paragraph telling what you think is the most desirable point to look for in an occupation.

REFERENCES FOR FURTHER READING

TOLMAN, WM. H. and GUTHRIE, ADELAIDE W. *Hygiene for the Worker.* American Book Co., 1912.

SCHWAB, CHAS. M. *Succeeding with What You Have.*

HUBBARD, ELBERT. *A Message to Garcia.*

GOWIN, E. B. *The Executive and His Control of Men.* The Macmillan Co., 1911.

JORDAN, DAVID STARR. *The Call of the Twentieth Century.*

PRITCHARD, MYRON T. and TURKINGTON, GRACE A. *Stories of Thrift for Young Americans.* Chas. Scribner's Sons, 1915.

GULICK, LUTHER H. *The Efficient Life.* Doubleday, Page & Co.

BRIGGS, LEBARON R. *Routine and Ideals.* Houghton, Mifflin & Co., 1904.

INDEX

Accident Prevention, in factories, 90, 105.
Accounting, 137, 126; in dressmaking and millinery, 210; in hotels, 219; in stores, 131; in tailoring, 215.
Acting, opportunities in, 222; preparation for, 221, 222; qualifications for, 221.
Advertising, 138; opportunities in, 140; preparation for, 140; qualifications for, 138.
Agriculture, government service, 20, 38; opportunities in, 36, 42; preparation for, 35; qualifications for, 32.
Apprentice, 95, 97 in building, 114; in dressmaking, 212; in printing, 108.
Architect, 110.
Army and Navy, 20.
Artist, 220; opportunities of, 222; preparation of, 221, 222; qualifications of, 221.
Attorneys (See Law).

Banking, 80; opportunities in, 82, 83; preparation for, 82; qualifications for, 81.
Bookkeeping, 137. (See also Banking).
Building Trades, 109; opportunities in, 115; preparation for, 114; qualifications for, 111.

Capital, need of in farming, 44; in professions, 144, 148, 149, 166.
Character, 239.
Chemist, 203; opportunities of, 205; preparation of, 204; qualifications of, 204.
Choosing an Occupation, principles of choice, 5.
Civil Service (See Government Service).
Commercial Occupations, in building, 113, 114; in government service, 19, 27; grouping of, 122; qualifications for, 123; in railroading, 63; (See Stenographers, Typists, Salesmen, Advertising, etc.).
Consular Service, 19, 20.
Contractor (See Building Trades).
Courtesy, 227; in hotel-keepers, 219; in salesmen, 124, 227; in telephoning, 228.

Dentist, 164; opportunities of, 167; preparation of, 166; qualifications of, 165, 166.
Department Stores (See Commercial Occupations).
Doctors (See Medicine).
Domestic Arts, 215; opportunities in, 217; preparation for, 216; qualifications for, 216.
Dressmaking, 209; opportunities in, 212; preparation for, 211, 212; qualifications for, 210.

Efficiency, 234; decision, 236; dispatch, 236; initiative, 235; perseverance, 237; skill, 237.

Engineering, 195; in building, 110, 111; chemical (See Chemist); in government service, 196; in manufacturing 195; in mining, 51, 52; opportunities in, 199; preparation for, 198; qualifications for 197; in railroading, 72; telephone and telegraph, 202.
Executive Ability, for agriculture, 34; general, 68; for railroading, 67; in stores, 131.

Factories (See Manufacturing).
Farming (See Agriculture).
Fisheries, 55.
Forestry, 46; in government service, 46, 47; opportunities in, 48, 49; preparation for, 48; qualifications for, 47.
Friends, 244.

Government Service, 18; agriculture, 38, 39; classified civil service, 21; consular service, 19, 20; forestry, 46, 47; fisheries, 56; mail service, 18; as stepping stone, 26; in Washington, 18, 19.

Health, 232; in athletics, 232; of builders, 115; of doctors, 155; in factories, 104, 105; of farmers, 42, 43; in nursing, 162; in war, 232, 233.
Hotel management, 218; opportunities in, 220; preparation for, 219; qualifications for, 218.

Income from advertising, 141; from banking, 82, 83; bonus system, 103; from building, 100; of chemist, 206; of dentist, 167; from dressmaking, 212, 213; from farming, 36; from forestry, 48; general, 10; from government service, 25, 26; from manufacturing, 99; from metal trades, 100; from millinery, 212, 213; of nurse, 163; of physician, 156; from printing, 100, 108, 109; from railroading, 71; of salesmen, 130; from social service, 186; of teacher, 174.
Intellect (See Efficiency).

Journalism, 177; opportunities in, 181; preparation for, 180; qualifications for, 178.

Law, 145; general divisions, 145, 146; in government service, 19, 27; opportunities in, 148; preparation for, 148; qualifications for, 146.
Librarian, 188; preparation of, 190; qualifications of, 189.

Manufacturing, opportunities in, 99; preparation for, 94; qualifications for, 90; in railroading, 62; welfare work, 186.
Medicine, 152; opportunities in, 156; preparation for practicing, 155; qualifications for practicing, 152.
Millinery, 209; opportunities in, 212; preparation for, 211, 212; qualifications for, 210.
Mining, opportunities in, 53, 54; preparation for, 52; qualifications for, 51.
Minister (See Social Service).
Musician, 220; opportunities of, 222; preparation of, 221, 222; qualifications of, 221.

Nursing, 162; opportunities in, 163; preparation for, 163; qualifications for, 162.

Occupations, relationships of, 11.
Office Work, 134 (See Stenographer and Typist).
Opportunities, of actors, 222; in advertising, 140; in agriculture, 36; for artists, 222; in banking, 82, 83; in building, 115; for dentists, 167; in domestic arts, 217; in dressmaking, 212; in engineering, 199; in forestry, 48; in government service, 24, 26; for hotel keepers, 220; in journalism, 181; in law, 148; in manufacturing, 99; in medicine, 156; in millinery, 212; in mining, 53, 54; for musicians, 212; in nursing, 163, 164; in printing, 108, 109; in railroading, 71; for salesmen, 130; in social service, 186; in stenography and typewriting, 136; in tailoring, 214; in teaching, 174.

Pay (See Income).
Personality, 225; appearance, 226; cheerfulness; 231; enthusiasm, 231; manner, 227; tact, 230; voice, 226.
Physical Director (See Teaching).
Physician (See Medicine).
Playgrounds (See Social Service).
Post Office (See Government Service).
Poultry Business, 31, 38.
Preparation, for acting, 221, 222; for advertising, 140; for agriculture, 35; of artists, 221, 222; for banking, 82; of builders, 114; of dentists, 166; for domestic arts, 216; for dressmaking, 211, 212; for engineering, 198; for forestry, 48; for government service, 23, 24; for hotel management, 219; for journalism, 180; for law, 148; for manufacturing, 94; for medicine, 155; for millinery, 211, 212; for mining, 52; of musicians, 221, 222; of nurses, 163; for printing, 108; for professions, 27; for railroading, 70; of salesmen, 127; for social service, 185; of stenographer and typist, 136; of teachers, 173.
Printing, 107; in government service, 19; preparation for, 108.
Professions, 144; (See Dentist, Chemist, Law, Medicine, Teaching).

Qualifications, of actors, 221; for advertising, 139; for agriculture, 32; of artists, 221; for banking, 81; of builders, 111; for business, 123; of dentists, 165; 166; difficulty in determining, 9; for domestic arts, 216; for dressmaking, 210; for engineering, 197; for forestry, 47; for government service, 21; of hotel keepers, 218; for journalism, 178; for law, 146; for manufacturing, 90; for medicine, 152; for millinery, 210; for mining, 51; of musician, 221; necessary for all occupations (See Efficiency, Personality, Health, Character, Friends); of nurses, 162, 163; for railroading, 66; of salesmen, 123; for social service, 184; of stenographer and typist, 135, 136; of teachers, 177.

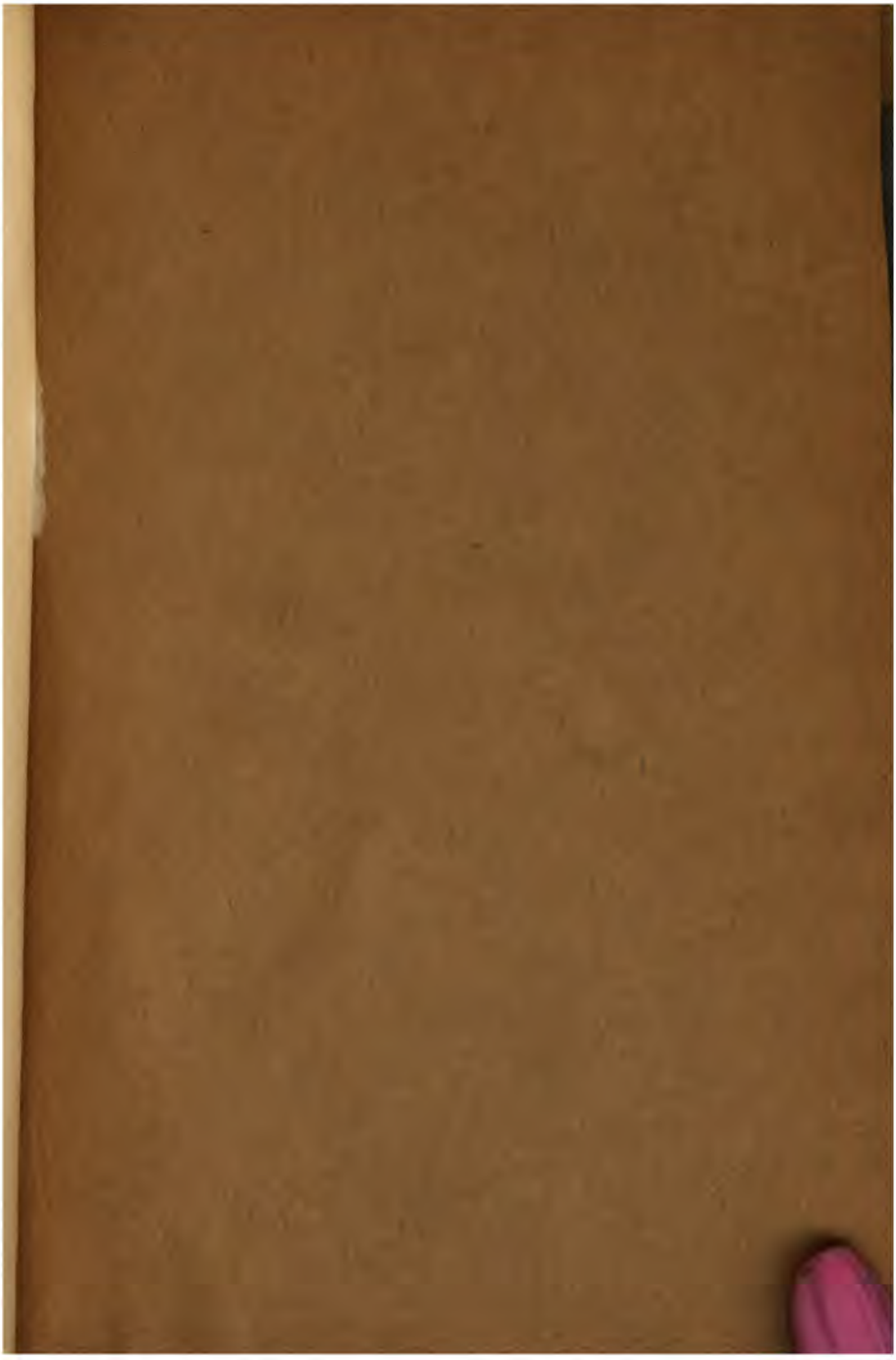
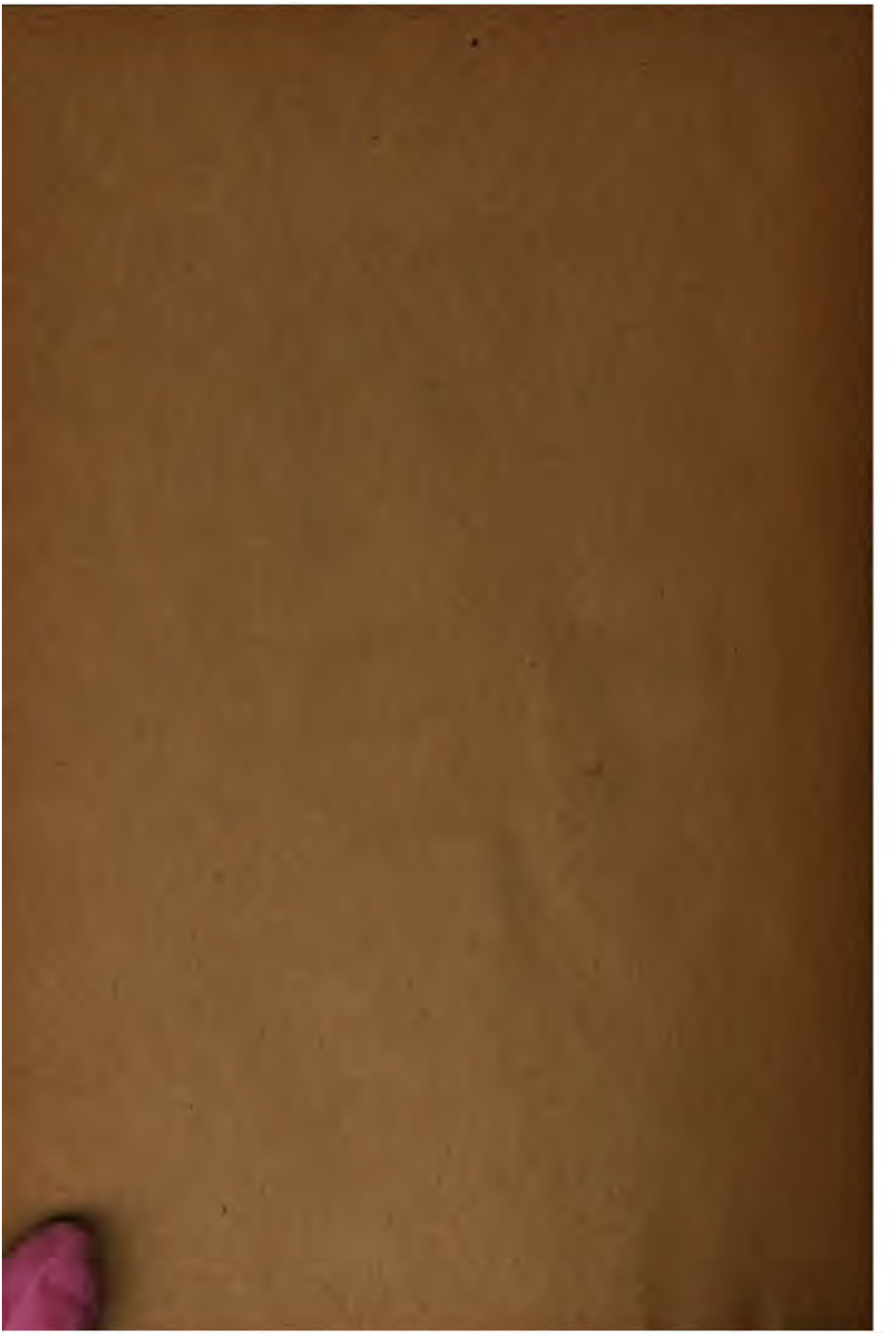
Railroading (See Transportation).
Restaurants (See Hotels).

Salary (See Income).
Salesmen, opportunities of, 130; preparation of, 127; qualifications of, 123.
Schools, library, 191; railroad, 70, 71; technical, 199.
Science, in agriculture, 40, 41; in government service, 27; in manufacturing, 96.
Scientific Manager, 104.
Social Service, 183; opportunities in, 186; preparation for, 185; qualifications for, 184.
Stenographers, 135; opportunities of, 136; preparation of, 136.

Tailoring, 209, 214, 215; management, 215; opportunities in, 214.
Teaching, opportunities in, 174; preparation for, 173; qualifications for, 171.
Training (See Preparation).
Transportation, Trades, history of, 60; opportunities in, 71; organization of, 61; preparation for, 70; qualifications for, 66; wages, 71.
Typists, 135; opportunities of, 136; preparation of, 136.

Veterinary, 38.

Wages (See Income).
Welfare Work (See Social Service).
Women, opportunities of, in advertising, 141; in agriculture, 45; in banking, 84; in building, 117; in dentistry, 168; in domestic arts, 217; in dressmaking, 212; in engineering, 207; in factories, 106, 107; in general, 14; in government service, 29; in journalism, 182; in law, 148, 151; in library work, 192; in medicine, 160; in millinery, 212; in mining, 50; in nursing, 163, 164; in offices, 138; in printing, 108; in railroading, 77; in social service, 188; in stenography and typewriting, 136; in teaching, 177.

Young Men's Christian Association (See Social Service).
Young Women's Christian Association (See Social Service).

PRINTED IN THE UNITED STATES OF AMERICA